

CONTAINS NO CBI

Form Approved
OMB No. 2010-0019
Approval Expires 12-31-89

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90-890000412

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Comprehensive Assessment Information Rule REPORTING FORM

88C

When completed, send this form to:

Document Processing Center Office of Toxic Substances, TS-790 U.S. Environmental Protection Agency 401 M Street, SW Washington, DC 20460 Attention: CAIR Reporting Office For Agency Use Only:

Date of Receipt: \_\_\_\_\_

Document

Control Number: \_\_\_\_

Docket Number: \_

Docute Hemmer

EPA Form 7710-52

PART A GENERAL REPORTING INFORMATION  1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Pederal Register Notice of	SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION
completed in response to the Federal Register Notice of [0]7 [0]3 [3]9 year  [] a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No	PART A GENERAL REPORTING INFORMATION
Table   CAS No.   CAS No.   CAS No.   Service   Servic	1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been
Register, list the CAS No	
b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.  (i) Chemical name as listed in the rule	[_] a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal
either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.  (i) Chemical name as listed in the rule	Register, list the CAS No $[2]6]4]7]1]-[6]2]-[5]$
(iii) Name of mixture as listed in the rule  (iii) Trade name as listed in the rule  N/A  c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.  Benzne, 1,3-diisocyanatomethyl Name of category as listed in the rule  CAS No. of chemical substance	either (i) the chemical name, (ii) the mixture name, or (111) the trade name o
(iii) Name of mixture as listed in the rule  (iii) Trade name as listed in the rule	(i) Chemical name as listed in the rule N/A
c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.  Name of category as listed in the rule	(ii) Name of mixture as listed in the rule
the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.  Benzne, 1,3-diisocyanatomethyl Name of category as listed in the rule	(iii) Trade name as listed in the rule N/A
CAS No. of chemical substance	the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of t substance you are reporting on which falls under the listed category.  Benzne, 1,3-diisocyanatomethy
Name of chemical substance	Name of category as listed in the rule (Toluene Diisocyanate)
1.02 Identify your reporting status under CAIR by circling the appropriate response(s).  CBI Manufacturer	CAS No. of chemical substance $(2]6]4[7]1]-(6]2]-5$
CBI Manufacturer	Name of chemical substance Rubinate: 903
Processor	·
Processor	[ ] Importer
X/P manufacturer reporting for customer who is a processor	

		; the substance you are reporting on have an "x/p" designation associated with it the above-listed Federal Register Notice?
		Go to question 1.0
لسبا	No	
1.04 CBI	a.	Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.
		Yes
		(No)
	b.	Check the appropriate box below: N/A
		[_] You have chosen to notify your customers of their reporting obligations
		Provide the trade name(s)
		You have chosen to report for your customers  You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.
1.05 CBI	rep	you buy a trade name product and are reporting because you were notified of your orting requirements by your trade name supplier, provide that trade name.
		ie name I.C.I. Rubinate - 903
	Is	the trade name product a mixture? Circle the appropriate response.
	Yes	)
	No .	
.06	Cert	ification The person who is responsible for the completion of this form must the certification statement below:
	"I } ente	ereby certify that, to the best of my knowledge and belief, all information ered on this form is complete and accurate."
	<u>Cata</u>	rino S. Gonzalez Catarino S. Honzalez July 3,1939 NAME SIGNATURE DATE SIGNED
	Pla	TITLE (213 ) 636 - 9151 TELEPHONE NO.
XII	lark	(X) this box if you attach a continuation sheet.
	(	CONTAINS NO CBI as Par phone convention W/ Mr. Gonzaley

1.07 <u>CBI</u> [_]	Exemptions From Reporting If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.				
	"I hereby certify that, to the information which I have not in to EPA within the past 3 years period specified in the rule."	cluded in	this CAIR Reporting Form	n <b>has bee</b> n submitted	
	(i	N/A)			
	NAME		SIGNATURE	DATE SIGNED	
		(	) -		
	TITLE	• •	TELEPHONE NO.	DATE OF PREVIOUS SUBMISSION	
CBI [_]	"My company has taken measures and it will continue to take th been, reasonably ascertainable using legitimate means (other tajudicial or quasi-judicial prinformation is not publicly avawould cause substantial harm to  Catarino S. Gonzalez  NAME  Plant Engineer  TITLE	to protect ese measure by other han discontinuous coeeding) ilable el my compa	t the confidentiality of res; the information is necessary persons (other than governously based on a showing of without my company's consewhere; and disclosure only's competitive position of the state of the stat	not, and has not enment bodies) by of special need in esent; the of the information	
	fark (X) this box if you attach a	a continu	ation sheet.		



**ICI Polyurethanes Group** 

Mantua Grove Road West Deptford, NJ 08066 USA

Telephone: (609) 423-8300

(800) 257-5547

February 6, 1989

Mr. Wilson Cudd Plant Manager Allen Foam Corporation 175 E. Manville Street Compton, CA 90224

Dear Mr. Cudd:

SUBJECT: ENVIRONMENTAL PROTECTION AGENCY

COMPREHENSIVE ASSESSMENT INFORMATION RULE: FINAL RULE

RUBINATE TDI 80/20

As a customer of ICI Americas Inc. and a purchaser of Rubinate TDI 80/20, we are sending you this letter as part of ICI Americas Inc.'s obligation to be in full compliance with the laws of the United States and to make you aware of significant new reporting obligations under the Toxic Substances Control Act. It is imperative that you read this letter and the enclosures and fully comply with the requests made by the Environmental Protection Agency. Failure to comply in a timely manner may result in a fine of \$25,000 per day for each day you are late in responding.

On December 22, 1988 the EPA promulgated a rule entitled the Comprehensive Assessment Information Rule, 40 CFR 704 et seq. A copy of this rule which appears in the Federal Register at Volume 53, page 51697 is attached for your information. Under this rule certain manufacturers, importers and processors of chemical substances and mixtures are required to maintain records and submit information on such substances or mixtures as the EPA may require. The EPA is requiring that a standard list of questions be answered on the CAIR reporting form which may be obtained by writing to or by telephoning:

TSCA Assistance Office (TS-799) Office of Toxic Substances Environmental Protection Agency 401 M Street, S.W. Washington, DC 20460

(202) 554-1404



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February 6, 1989
ENVIRONMENTAL PROTECTION AGENCY
COMPREHENSIVE ASSESSMENT INFORMATION RULE: FINAL RULE
RUBINATE TDI 80/20

For Rubinate TDI 80/20 the following questions must be answered as described in the rule at 40 CFR 704.225 (page 51722 of the Federal Register):

Questions numbered 1, 2.04 thru 2.09, 2.11 thru 2.16, 3 all, 4.01 thru 4.05, 5 all, 6.05, 7.01, 7.03 thru 7.06, 8.01, 8.05, 8.06, 8.23, 9.01 thru 9.15, 9.19, 9.20, 9.22, 10.01, 10.02, 10.05, 10.08 thru 10.16 and 10.23.

You must supply the EPA with the required information within 90 days of receipt of this notification. Reports must be submitted by certified mail to:

TSCA Document Processing Center (TS-790)
Office of Toxic Substances
U.S. Environmental Protection Agency
Room L-100
401 M Street, SW.
Washington, DC 20460
ATTENTION: CAIR Reporting

If you cannot submit your reports by this deadline, you may apply for a reasonable extension as described in section 704.215(b) of the rule.

EPA assures the public that it will have adequate staff to respond to the many questions that they anticipate will be asked during the reporting period. General questions concerning the rule in the reporting form will be handled by the TSCA Assistance office at 1-202-554-1404.

To assist you in supplying the requested information, we have enclosed for your information a product data sheet and a Material Safety Data Sheet for Rubinate TDI 80/20.

Very truly yours,

Robert R. Reen

Commercial Director

1.11	Parent Company Identification
<u>CBI</u>	Name [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
1	N/A [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	[_]_] [_]_]_]_][_]_]_]_]_]_] State
	Dun & Bradstreet Number
1.12	Technical Contact
<u>CBI</u>	Name [HO]U]S]T]O]N]]P]A]X]S]O]N]]]]]]]]]]]]]]]]
[_]	Title [C]H]E]M]I]C]A]L] ]P]R]O]C]E]S]S] ]E]N]G]I]N]E]E]R]
	Address $[1]7]5]$ $[E]$ $[M]A$ $[N]$ $[V]$ $[L]$ $[E]$ $[S]$ $[E]$ $[E]$ $[E]$ $[E]$ $[L]$ $[E]$
*	(C)OMPTONITITITITITITITITITITITITITITITITITITI
•	Telephone Number $[\underline{2}]\underline{1}]\underline{3}]-[\underline{6}]\underline{3}]\underline{6}]-[\underline{9}]\underline{1}]\underline{5}]\underline{1}$
1.13	This reporting year is from $[ \overline{0} ] \overline{1} ] [ \overline{8} ] \overline{8} ]$ to $[ \overline{1} ] \overline{2} ] [ \overline{8} ] \overline{8} ]$ This reporting year is from
[-]	Mark (X) this box if you attach a continuation sheet.
.—,	

PART	B CORPORATE DATA
1.09	Facility Identification
<u>CBI</u> [ <u>]</u> ]	Name [A]L]L[E]N]_]F]O]A]M]_[C]O]R]P]O]R]A]T]L]O]N]_]_]] Address [1]7]5]_]E]_]M]A]N]V]L]L]E]_]S]T]R]E]E]T]_]]]]]  City  [C]A] [9]0]2]2]0][0]2]2]4]  State
	Dun & Bradstreet Number       [0]0]-[8]3]0]-[4]1]9]8]         EPA ID Number       [C]A]D]0]0]8]3]0]4]         Employer ID Number       [3]4]7]3]2]3]5]4]         Primary Standard Industrial Classification (SIC) Code       [2]8]1]5]         Other SIC Code       []]]]]]         Other SIC Code       []]]]]]
1.10	Company Headquarters Identification
<u>CBI</u>	Name [T]H]E]
( <u> </u>	Mark (X) this box if you attach a continuation sheet.

1.14	Facility Acquired If you purchased this facility during the reporting year, provide the following information about the seller:
CBI	Name of Seller [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	Mailing Address [_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	(N/A)  [_]]]]]]]]]]]]]_
	[_]_] [_]_]_][_]_]_]_ State
	Employer ID Number
	Date of Sale
	Contact Person [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	Telephone Number
1.15	Facility Sold If you sold this facility during the reporting year, provide the following information about the buyer:
<u>CBI</u>	Name of Buyer [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
[_i	Mailing Address [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	(N/A) [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	[_]_] [_]_]_]_]]]]]]]
	Employer ID Number
	Date of Purchase
	Contact Person [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
•	Telephone Number
•	
	Mark (X) this box if you attach a continuation sheet.
· — ·	

1.16	For each classification listed	below, state the quantity of the	listed substance that
1.10	was manufactured, imported, or	processed at your facility during	the reporting year.

	was manufactured, imported, or processed at your facility during the	reporting year.
CBI	Classification	N/A
	Imported	N/A
	Processed (include quantity repackaged)	53,206
	Of that quantity manufactured or imported, report that quantity:	· · · · · · · · · · · · · · · · · · ·
	In storage at the beginning of the reporting year	··N/A·
	For on-site use or processing	N/A
	For direct commercial distribution (including export)	N/A
	In storage at the end of the reporting year	<u>N/A</u>
	Of that quantity processed, report that quantity:	<i>;</i>
	In storage at the beginning of the reporting year	53,206
•	Processed as a reactant (chemical producer)	595,680
	Processed as a formulation component (mixture producer)	N/A
	Processed as an article component (article producer)	<u>N/A</u>
	Repackaged (including export)	<u>N/A</u>
	In storage at the end of the reporting year	26,778

<sup>1</sup> Kg = 2.205 pounds

<sup>1</sup> Pound = .454 kg

 $<sup>[\</sup>overline{xx}]$  Hark (X) this box if you attach a continuation sheet.

To: Cat Gonzalez From: Rusty Mallouf Date: June 26, 1989

Subject: Response to CAIR questionnaire

A: January 1988 ISO inventory?

117,193 lbs.

B: 1988 calendar year ISO consumption? 1,312,071 lbs.

- C: 1988 calendar year B-1 formulation consumption? 478,370 lbs.
- D: 1988 calendar year B-2 formulation consumption? 816,998 lbs.
- E. 1988 calendar year B-3 formulation consumption? 1,710,162 lbs.
- F. December 1988 ISO inventory?
  58,983 lbs.
- G. 1987 calendar year ISO consumption? 610,430 lbs.
- H. 1986 calendar year ISO consumption? 993,387 lbs.
- I. 1985 calendar year ISO consumption? 925,989 lbs.
- J. Maximum daily ISO inventory? 270,000 lbs.
- K. Average monthly ISO inventory? 104,231 lbs. (7 month average)

& Malloy

or a componer chemical. (	nt of a mixture, p	ance on which you are re rovide the following inf position is variable, re l formulations.)	ormation for each	h component
Cor	nponent Name	Supplier Name	Composition (specify	rage % on by Weight precision, 45% ± 0.5%)
. <u> </u>	I/A	N/A	N/A	
			Total	100%
				٠

	SECTION 2 MANUFACTURER, IMPORTER, AND PROCESSOR VOLUME AND	USE	
2.01 CBI	State the total number of years, including the reporting year, that manufactured, imported, or processed the listed substance.	t your facili	ty has
[_]	Number of years manufactured	N/A	yrs
	Number of years imported		_
	Number of years processed	***************************************	
2.02 CBI	State the quantity of the listed substance that your facility manuf or processed during the corporate fiscal year preceding the reporti	ng year.	
[_]		Mo.	Year
	Quantity manufactured		
	Quantity imported		
	Quantity processed	N/A	kg
<u>CBI</u>	or processed during the 2 corporate fiscal years preceding the repo descending order.  Year ending	·· [_]_] [	_]_] Year
7	Quantity manufactured	N/A	kg
	Quantity imported	N/A	kg
	Quantity processed	N/A	kg
	Year ending		]_] Year
	Quantity manufactured	N/A	kg
	Quantity imported	N/A	kg
	Quantity processed		
·			
1	Mark (X) this box if you attach a continuation sheet.		

	or processed during the 3 corporate fiscal years preceding the redescending order.	porting year	in
CBI			
[_]	Year ending	$\cdots [\overline{1}]\overline{2}$ Mo.	$\left[\frac{8}{8}\right]\frac{7}{7}$
	Quantity manufactured	N/A	kg
	Quantity imported	N/A	kg
	Quantity processed	277,135	kg
	Year ending	$\cdots \begin{bmatrix} \overline{1} \\ \overline{1} \end{bmatrix} \overline{\underline{2}} $	$\left[\frac{8}{8}\right]$ $\left[\frac{6}{6}\right]$
	Quantity manufactured	N/A	kg
	Quantity imported	N/A	kg
	Quantity processed	450,998	kg
.t	Year ending	$\cdots \begin{bmatrix} \boxed{1} \boxed{2} \end{bmatrix}$	[8]5] Year
	Quantity manufactured	420,399	kg
	Quantity imported	N/A	kg
	Quantity processed	N/A	kg
2.05 CBI	Specify the manner in which you manufactured the listed substance appropriate process types. $$({\rm N/A})$$	. Circle al	1
<u> </u>	Continuous process	• • • • • • • • • • • • •	1
	Semicontinuous process	· • • • • • • • • • • • • • • • • • • •	2
	Batch process	• • • • • • • • • • •	3

2.06 CBI	Specify the manner in appropriate process t	which you processed types.	the listed substance.	Circle all				
[_]	Continuous process .	Continuous process						
	Semicontinuous process							
	Batch process							
2.07 CBI	State your facility's substance. (If you are question.)	name-plate capacity free a batch manufacture	for manufacturing or per or batch processor,	rocessing the listed do not answer this				
[_]	Manufacturing capacity	· · · · · · · · · · · · · · · · · · ·	•••••	N/A kg/y				
	Processing capacity .							
2.08 <u>CBI</u>	If you intend to incremanufactured, imported year, estimate the incovolume.	l, or processed at any	time after your curre	ent corporate fiscal				
[_]	(N/A)	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)				
	Amount of increase							
شه	Amount of decrease							
	Mark (X) this box if ye	ou attach a continuati	ion sheet.					

To: Cat Gonzalez
From: Rusty Mallouf
Date: June 26, 1989

Subject: Response to CAIR questionnaire

A: January 1988 ISO inventory?

B: 1988 calendar year ISO consumption? 1,312,071 lbs.

C: 1988 calendar year B-1 formulation consumption?
478,370 lbs.

D: 1988 calendar year B-2 formulation consumption? 816,998 lbs.

E. 1988 calendar year B-3 formulation consumption? 1,710,162 lbs.

F. December 1988 ISO inventory?

58,983 lbs. ~

G. 1987 calendar year ISO consumption? 610,430 lbs.

H. 1986 calendar year ISO consumption?

993,387 lbs.

I. 1985 calendar year ISO consumption? 925,989 lbs.

J. Maximum daily ISO inventory? 270,000 lbs.

K. Average monthly ISO inventory?
104,231 lbs. (7 month average)

Malloy

2.09	listed substanc substance durin	argest volume manufacturing or processing proce e, specify the number of days you manufactured g the reporting year. Also specify the average s type was operated. (If only one or two opera	or processed number of h	the listed ours per
<u>CBI</u>			Days/Year	Average Hours/Day
	Process Type #1	(The process type involving the largest quantity of the listed substance.)		
		Manufactured	N/A	N/A
		Processed	184	16
	Process Type #2	(The process type involving the 2nd largest quantity of the listed substance.)		
		Manufactured	N/A	N/A
		Processed	N/A	N/A
<del>.</del>	Process Type #3	(The process type involving the 3rd largest quantity of the listed substance.)		
		Manufactured	N/A	N/A
		Processed	N/A	N/A
2.10 <u>CBI</u> [_]	substance that chemical.  Maximum daily in	um daily inventory and average monthly inventor was stored on-site during the reporting year in (N/a)  nventory	the form of	
[_]	Mark (X) this bo	ox if you attach a continuation sheet.		

_]	(N/A)				Source of By
	CAS No.	Chemical Name	Byproduct, Coproduct <u>or Impurity</u> <sup>1</sup>	Concentration (%) (specify ± % precision)	products, Co products, or Impurities
	-				
•	1 <sub>11-2</sub> Ab . 6-13-1			1	
	use the follow	wing codes to designat	te byproduct, copro	duct, or impurity	<b>/:</b>
	B = Byproduct C = Coproduct				
	B = Byproduct C = Coproduct I = Impurity				
	C = Coproduct				

		b. % of Quantity Manufactured,	<b>%</b> o	c. f Quantity	d,		
	Product Types <sup>1</sup>	Imported, or Processed	Use	d Captively On-Site	Type of End-User		
	В	100%		N/A	CS		
A B	<sup>1</sup> Use the following code A = Solvent B = Synthetic reactant C = Catalyst/Initiator Sensitizer	t	L = Mol M = Pla N = Dye	dable/Castabl sticizer /Pigment/Colo	e/Rubber and addit rant/Ink and addit rographic chemical		
	D = Inhibitor/Stabiliz Antioxidant	er/Scavenger/	and	additives	n/Plating chemical		
	E = Analytical reagent	· •	Q = Fue	l and fuel add	ditives		
	F = Chelator/Coagulant G = Cleanser/Detergent				als and additives		
	H = Lubricant/Friction		S = Fragrance/Flavor T = Pollution control U = Functional fluids	ol chemicals s and additives			
	agent	• • · · ·					
	<pre>I = Surfactant/Emulsis J = Flame retardant</pre>	:1er		<pre>V = Metal alloy and additives W = Rheological modifier</pre>			
	K = Coating/Binder/Adhesive and additives X = Other (specify)						
	•	<sup>2</sup> Use the following codes to designate the type of end-users:					
	_	es to designate the	type of	end-asers:			

2.13 <u>CBI</u> [_]	import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacturing import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)				
	a.	· b.	c.	d.	
	Product Types <sup>1</sup>	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users <sup>2</sup>	
	N/A	N/A	N/A	N/A	
	<pre>"Use the following cod A = Solvent B = Synthetic reactan C = Catalyst/Initiato     Sensitizer D = Inhibitor/Stabilic     Antioxidant E = Analytical reagen F = Chelator/Coagulan G = Cleanser/Detergen H = Lubricant/Friction     agent I = Surfactant/Emulsi: J = Flame retardant K = Coating/Binder/Add  "Use the following code I = Industrial CM = Commercial</pre>	t r/Accelerator/ zer/Scavenger/ t t/Sequestrant t/Degreaser n modifier/Antiwear fier hesive and additives es to designate the	L = Moldable/Castable M = Plasticizer N = Dye/Pigment/Color O = Photographic/Reprand additives P = Electrodeposition Q = Fuel and fuel add R = Explosive chemica S = Fragrance/Flavor T = Pollution control U = Functional fluids V = Metal alloy and a W = Rheological modif X = Other (specify) type of end-users:	n/Plating chemicals ditives als and additives chemicals l chemicals s and additives additives	
[_]	Mark (X) this box if yo	ou attach a continua	tion sheet.		

<b>a.</b> (N/A)	b.	c. Average %	d.			
Product Type <sup>1</sup>	Final Product's Physical Form <sup>2</sup>	Composition of Listed Substance in Final Product	Type of End-Users <sup>3</sup>			
-						
	<del>*************************************</del>					
			<del></del>			
<sup>1</sup> Use the following cod	les to designate pro					
A = Solvent	es to designate pro-	L = Moldable/Castable	/Rubber and addi			
B = Synthetic reactar	it	M = Plasticizer				
C = Catalyst/Initiate	or/Accelerator/	<pre>N = Dye/Pigment/Colorant/Ink and addit 0 = Photographic/Reprographic chemical</pre>				
Sensitizer						
D = Inhibitor/Stabilizer/Scave	zer/\$cavenger/	and additives				
Antioxidant		<pre>P = Electrodeposition/Plating chemical: Q = Fuel and fuel additives R = Explosive chemicals and additives S = Fragrance/Flavor chemicals</pre>				
E = Analytical reager						
F = Chelator/Coagular						
G = Cleanser/Deterger						
H = Lubricant/Friction	on modifier/Antiwear					
agent			ids and additives			
I = Surfactant/Emulsi	fier	V = Metal alloy and a				
J = Flame retardant		W = Rheological modif	1er			
K = Coating/Binder/Ad		_				
Use the following cod  A = Gas		final product's physic	al form:			
A = Gas B = Liquid	F2 = Crys F3 = Gran	stalline solid				
C = Aqueous solution	F4 = 0the					
D = Paste	G = Gel	er sorra				
E = Slurry		er (specify)				
F1 = Powder	– 0					
	<sup>3</sup> Use the following codes to designate the type of end-users:					
I = Industrial	CS = Cons	umer				
CM = Commercial	H = 0the	er (specify)				

2.15 CBI	Circ list	tle all applicable modes of transportation used to deliver bused substance to off-site customers.	ılk shipments	of the						
[_]	Truc	.k								
_		car								
		e, Vessel								
		line								
		e								
		r (specify)								
2.16 CBI	or p	omer Use Estimate the quantity of the listed substance us repared by your customers during the reporting year for use nd use listed (i-iv).	ed by your cu under each ca	stomers						
[_]	Category of End Use									
	i.	Industrial Products								
		Chemical or mixture	N/A	ˈkg/yɪ						
		Article	N/A							
	ii.	Commercial Products								
		Chemical or mixture	N/A	kg/yr						
		Article								
	iii.	Consumer Products	***************************************							
		Chemical or mixture	N/A	kg/yr						
		Article								
	iv.	<u>Other</u>		_						
		Distribution (excluding export)	N/A	kg/yr						
		Export	-	kg/yr						
		Quantity of substance consumed as reactant		kg/yr						
		Unknown customer uses	N/A	kg/yr						
				<del>_</del> - ·						
[_]	Mark	(X) this box if you attach a continuation sheet.								

2.17 CBI	State the quantity of the listed substance that you exported duryear.	ing the repo	rting
[_]	In bulk	N/A	kg/y
	As a mixture	N/A	 kg/y
	In articles	N/A	kg/y
			•

[ ] Mark (X) this box if you attach a continuation sheet.

	A GENERAL DATA							
3.01 <u>CBI</u> [_]	Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases. The average price is the market value of the product that was traded for the listed substance.							
_	Source of Supply	Quantity (kg)	Average Pric (\$/kg)					
	The listed substance was manufactured on-site.	N/A	N/A					
	The listed substance was transferred from a different company site.	N/A	N/A					
	The listed substance was purchased directly from a manufacturer or importer.	595,680	\$ .50					
	The listed substance was purchased from a distributor or repackager.	N/A	N/A					
	The listed substance was purchased from a mixture producer.							
3.02 CBI [_]	Circle all applicable modes of transportation used to deliver the listed substance to your facility.  Truck							
BI	your facility.							
BI	your facility.	•••••	(					
BI	Truck	••••••						
BI	Truck	•••••••••••••••••••••••••••••••••••••••						
BI	Truck	•••••••••••••••••••••••••••••••••••••••						
BI	Truck	•••••••••••••••••••••••••••••••••••••••						
BI	Truck	•••••••••••••••••••••••••••••••••••••••						
BI	Truck	•••••••••••••••••••••••••••••••••••••••						
BI	Truck	•••••••••••••••••••••••••••••••••••••••	•••••					

3.03 CBI	a.	Circle all applicable containers used to transport the listed substance to you facility.	ır
[_]		Bags	1
		Boxes	2
		Free standing tank cylinders	3
		Tank rail cars	4
		Hopper cars	5
		Tank trucks	
		Hopper trucks	_
		Drums	
		Pipeline	_
		Other (specify)	
	b.	If the listed substance is transported in pressurized tank cylinders, tank rai cars, or tank trucks, state the pressure of the tanks.	
		Tank cylinders N/A m	mHg
		Tank rail cars	mHg
		Tank trucks	ımHg
y.			

of the mixture, the n average percent compo	ame of its supplier(s)	form of a mixture, list the or manufacturer(s), an estate listed substance in the sorting year.	timate of the
Trade Name	Supplier or Manufacturer	Average % Composition by Weight (specify ± % precision)	Amount Processed (kg/yr)
Rubinate 903	ICI Polyurethane	75%/25%	595,680
	_		
		·	•

]	Quantity Used (kg/yr)	<pre>% Composition by Weight of Listed Sub- stance in Raw Material (specify ± % precision</pre>
Class I chemical	595,680	75%/25%
	N/A	N/A
•	N/A	N/A
Class II chemical	N/A	N/A
•	N/A	N/A
	N/A	N/A
Polymer	N/A	N/A
	N/A	N/A
	N/A	N/A
	•	

SECTION	4	PHYSICAL/CHEMICAL	PROPERTIES

c	en	ers	1	Ins	• 🛨	211	n t	in	ne.
u	<b>E11</b> 1	-16		4112				1 6 5	118 2

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

4.01 CBI	substance as it is man substance in the final	urity for the three majo nufactured, imported, or l product form for manuf or at the point you beg	processed. Measure	the purity of the
		Manufacture	Import	Process
	Technical grade #1	N/A % purity	N/A % purity	100 % purity
	Technical grade #2	N/A % purity	N/A % purity	N/A % purity
	Took=111 #2			
	<sup>1</sup> Major = Greatest quan	ntity of listed substanc	e manufactured, impor	ted or processed.
.02	1 Major = Greatest quan Submit your most recensubstance, and for eve an MSDS that you devel version. Indicate whe		e manufactured, impor fety Data Sheet (MSDS ng the listed substan-	ted or processed.  ) for the listed ce. If you possess wree, submit your
.02	1 Major = Greatest quan Submit your most recensubstance, and for eve an MSDS that you devel version. Indicate whe appropriate response.	ntity of listed substance of the substan	e manufactured, impor fety Data Sheet (MSDS ng the listed substan- ped by a different so has been submitted by	ted or processed.  ) for the listed ce. If you possessurce, submit your circling the
.02	1 Major = Greatest quant Submit your most recensubstance, and for everan MSDS that you develversion. Indicate whe appropriate response.	ntity of listed substance atly updated Material Sa ery formulation containicoped and an MSDS develoether at least one MSDS	e manufactured, impor fety Data Sheet (MSDS ng the listed substan- ped by a different so has been submitted by	ted or processed.  ) for the listed ce. If you possess urce, submit your circling the
.02	1 Major = Greatest quant Submit your most recensubstance, and for everan MSDS that you develversion. Indicate whe appropriate response.  Yes	ntity of listed substance of the substan	e manufactured, impor fety Data Sheet (MSDS ng the listed substan- ped by a different so has been submitted by	ted or processed.  ) for the listed ce. If you possess urce, submit your circling the
.02	1 Major = Greatest quant Submit your most recensubstance, and for everan MSDS that you develversion. Indicate whe appropriate response.  Yes	ntity of listed substance atly updated Material Sa ery formulation containicoped and an MSDS develoether at least one MSDS	e manufactured, imporfety Data Sheet (MSDS ng the listed substanged by a different so has been submitted by	ted or processed.  ) for the listed ce. If you posses urce, submit your circling the

Mark (X) this box if you attach a continuation sheet.

# MATERIAL SAFETY DATA SHEET

2285

# **ICI Polyurethanes Group**

West Deptford, New Jersey 08066 Phone, 24 hours: (302) 575-3000 Medical inquiries: (800) 327-8633 RECEIVED ALLEN FORM CORP.

C11021

Rev.: F

Date: 02/01/89

#### SECTION 1 NAME & HAZARD SUMMARY

Material name: RUBINATE M (Polymeric MDI)

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: Unstable.

Health hazards: Irritant (eye, skin, respiratory passages, skin sensitizer), inhalation (TLV). Based on MDI - harmful (respiratory sensitizer, lung injury)

Read the entire MSDS for a more thorough evaluation of the hazards.

ECTION 2 INGREDIENTS			8	TLV (ACGIH)	
4'-Diphenylmethane-diisocyanate		1		l	
(MDI, CAS 101-68-8)		l	~50	0.005 ppm	
imilar structure oligomers (CAS 9016-8	17-9)	i	~50	Not listed	
milar structure oligomers (CAS 9016-8	37-9)	İ	~50	Not lis	sted

Ingredients not precisely identified are proprietary or nonhazardous. Values are not product specifications.

#### SECTION 3 PHYSICAL DATA

Appearance and odor: Dark brown, viscous liquid with slight odor.

Boiling point: Decomposes at 646°F, 341.1°C Vapor pressure (mm Hg at 20°C): Below 0.0001

Vapor density (air = 1): 8.6 Solubility in water: Reacts

pH: No data

Specific gravity: 1.2

% Volatile by volume: No data .

# SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point: 425°F, 218°C (COC) Autoignition temperature: No data Flammable limits (STP): No data

#### Extinguishing media:

Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use very large quantities. The reaction between water and hot isocyanate may be vigorous.

Special fire fighting protective equipment:

Self-contained breathing apparatus with full facepiece and protective clothing.

# SECTION 4 FIRE AND EXPLOSION HAZARD DATA (continued)

Unusual fire and explosion hazards:

Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

## SECTION 5 REACTIVITY DATA

Stability:

Stable under normal conditions.

Incompatibility:

This product will react with any materials containing active hydrogens, such as water, alcohol, ammonia, amines, alkalies and acids. The reaction with water is very slow under 50°C, but is accelerated at higher temperatures and in the presence of alkalies, tertiary amines, and metal compounds. Some reactions can be violent.

Hazardous decomposition products:

Combustion products: Carbon dioxide, carbon monoxide. Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.

Hazardous polymerization:

May occur. High temperatures in the presence of alkalies, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

## SECTION 6 HEALTH HAZARD ASSESSMENT

General:

The health hazard assessment is based on an evaluation of the chemical composition together with information from a search of the scientific literature and other commercial sources.

Ingestion:

The acute oral LD50 in rat is reported to be 5,800 mg/kg. Relative to other materials, this material is classified as "practically nontoxic" by ingestion. In humans, irritation or chemical burns of the mouth, pharynx, esophagus and stomach can develop following ingestion. Injury may be severe and cause death.

Eye contact:

This material is reported to induce chemical burns in rabbit eye studies; a similar degree of eye injury may develop after contact with human eyes.

Skin contact:

This material is reported to be severely irritating in rabbit dermal irritation studies and will probably irritate human skin. Skin sensitization and irritation may develop after repeated and/or prolonged contact with human skin.

Skin absorption:

The acute dermal  ${\rm ID}_{50}$  in rabbit is reported to be above 16 g/kg. Systemically toxic concentrations of this product will probably not be absorbed through human skin.

# SECTION 6 HEALTH HAZARD ASSESSMENT (continued)

#### Inhalation:

Vapors and aerosols can irritate eyes, nose and respiratory passages. TDI vapors are easily generated and are lethal to rats via inhalation at concentrations below 10 ppm. A no effect level for rats of about 0.1 ppm was determined from a subacute study. This and other data indicate the vapors and aerosols of TDI are highly toxic relative to the vapors of other compounds. Vapors and aerosols of TDI strongly irritate the upper and lower respiratory tract. Human experience indicates that TDI will induce an asthma-like respiratory sensitization in some individuals. If applications which involve spraying (e.g. aerosols and mists) or if elevated temperatures are used, even higher vapor concentrations may result and introduce a greater degree of risk of inhalation injury. Rat and mouse toxicity and carcinogenicity studies were conducted with two years of inhalation exposure to vapors of TDI at concentrations of 0.05 and 0.15 ppm. No indication of carcinogenic effect was observed. However, mice exposed to 0.15 ppm for two years showed reduced weight gain and signs of irritation in the upper and lower respiratory tract. No other effect of toxicological significance was observed.

#### Other effects of overexposure:

There are two studies which allege that workers exposed to TDI at or near the current TLV have experienced impaired ventilatory capacities. These findings have not been independently substantiated. The National Toxicology Program (NTP) 4th Annual Report on Carcinogens (1985) lists TDI as a substance that may reasonably be anticipated to be a carcinogen based on a NTP Technical Report. In the cited study, laboratory animals gavaged TDI in corn oil developed cancer. In our view, the inhalation study is of more potential biological relevance to man.

#### First aid procedures:

Skin: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention. Wash contaminated clothing and decontaminate footwear before reuse. Eyes: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel. Ingestion: Do not induce vomiting. Give 1 or 2 glasses of water to drink and refer person to medical personnel. (Never give anything by mouth to an unconscious person.) Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel. Note to physician: Probable mucosal damage may contraindicate the use of

gastric lawage following ingestion.

# SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 0.2-5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets. All operations should be performed by trained personnel familiar with the hazards of the chemicals used. Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

# Disposal method:

Slowly stir the isocyanate waste into the decontamination solution described above using 10 parts of the solution for each part of the isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to went away. Neutralize the waste. Neither the solid nor the liquid portion is a hazardous waste under RCRA, 40 CFR 261.

# Container disposal:

Drums must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 5-15 liters of decontaminating solution into the drum, making sure the walls are well rinsed. Leave the drum soaking unsealed for 48 hours. Pour out the decontaminating solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal.

# SECTION 8 SPECIAL PROTECTION INFORMATION

TLV® or suggested control value:

The ACGIH TLV, OSHA PEL, and NIOSH recommendation for TDI is 0.005 ppm 8-hour TWA, 0.02 ppm STEL.

#### Ventilation:

If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation". Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

# Respiratory protection:

Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full facepiece or an air supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

# SECTION 8 SPECIAL PROTECTION INFORMATION (continued)

Protective clothing:

Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before rewearing. The literature indicates that clothing constructed of butyl rubber, Viton, Silver Shield, Saranex coated Tyvek, as well as some nitrile rubber and polyvinyl alcohol (PVA) coated garments have excellent resistance to permeation by TDI. Clothing constructed of Teflon, as well as some garments constructed of nitrile rubber, natural rubber and PVA exhibited limited resistance to permeation by TDI. Some clothing constructed of natural rubber or polyethylene exhibited little resistance to permeation by TDI. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

Eye protection:

Chemical tight goggles and full faceshield.

Other protective equipment:

Eyewash station and safety shower in work area.

#### SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Special precautions or other comments:

Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused the sensitization. Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool area. Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

#### SECTION 10 REGULATORY INFORMATION

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710: All ingredients are on the TSCA Section 8(b) Inventory.

CERCLA and SARA Regulations (40 CFR 355, 370, and 372):
Section 313 Supplier Notification. This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372: 100% TDI (CAS 584-84-9 and 91-08-7).

State Regulations:

California Proposition 65: No warnings are necessary.

The information herein is given in good faith but no warranty, expressed or implied, is made.

# MATERIAL SAFETY DATA SHEET

2290

# ICI Polyurethanes Group

West Deptford, New Jersey 08066 Phone, 24 hours: (302) 575-3000 Medical inquiries: (800) 327-8633

07080R at 254 3

## SECTION 1 NAME & HAZARD SUMMARY

Material name: RUBINATE TDI

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: Unstable.

Health hazards: Corrosive (eye), irritant (skin, respiratory passages, skin sensitizer), inhalation (TLV), harmful pulmonary (lung) sensitizer.

Based on TDI - harmful (respiratory sensitizer, lung injury).

pand the entire MSDS for a more thorough evaluation of the hazards.

Read the	eurile wan	s for a more	* chorondu	Evaluation	<u> </u>	CITE HOME AND .
SECTION 2 ING	REDIENTS				ક	TLV (ACGIH)
		2,4-isomer	(CAS 584-8	34-9)	80	0.005 ppm
		2,6-isomer			20	Not listed
				. 1		i
				1		1

Ingredients not precisely identified are proprietary or nonhazardous. Values are not product specifications.

#### SECTION 3 PHYSICAL DATA

Appearance and odor: Clear, colorless liquid with sharp odor

Boiling point: 484°F, 251.1°C

Vapor pressure (mm Hg at 20°C): 0.02

Vapor density (air = 1): 6.0 Solubility in water: Reacts

pH: No data

Specific gravity: 1.22

% Volatile by volume: No data

# SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point: 270°F, 132°C (OC) Autoignition temperature: No data Flammable limits (STP): 0.9-9.5%

#### Extinguishing media:

Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use very large quantities. The reaction between water and hot isocyanate may be vigorous.

Special fire fighting protective equipment:
Self-contained breathing apparatus with full facepiece and protective clothing.

# MATERIAL SAFETY DATA SHEET

2290

ICI Polyurethanes Group

West Deptford, New Jersey 08066 Phone, 24 hours: (302) 575-3000 Medical inquiries: (800) 327-8633

07080R Am miles in

Rev.: F \_\_\_\_\_\_ Date: 02/06/89

SECTION 1 NAME & HAZARD SUMMARY

Material name: RUBINATE TDI

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: Unstable.

Health hazards: Corrosive (eye), irritant (skin, respiratory passages, skin sensitizer), inhalation (TLV), harmful pulmonary (lung) sensitizer. Based on TDI - harmful (respiratory sensitizer, lung injury).

Read the entire MSDS for a more thorough evaluation of the hazards.

1444 414 414 414 414		
SECTION 2 INGREDIENTS	ક	TLV (ACGIH)
Toluene diisocyanate, 2,4-isomer (CAS 584-84-9)	1 80	0.005 ppm
Toluene diisocyanate, 2,6-isomer (CAS 91-08-7)	1 20	Not listed
	I	1

Ingredients not precisely identified are proprietary or nonhazardous. Values are not product specifications.

#### SECTION 3 PHYSICAL DATA

Appearance and odor: Clear, colorless liquid with sharp odor

Boiling point: 484°F, 251.1°C

Vapor pressure (mm Hg at 20°C): 0.02

Vapor density (air = 1): 6.0 Solubility in water: Reacts

pH: No data

Specific gravity: 1.22

% Volatile by volume: No data

## SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point: 270°F, 132°C (OC) Autoignition temperature: No data Flammable limits (STP): 0.9-9.5%

## Extinguishing media:

Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use very large quantities. The reaction between water and hot isocyanate may be vigorous.

Special fire fighting protective equipment:

Self-contained breathing apparatus with full facepiece and protective clothing.

# SECTION 4 FIRE AND EXPLOSION HAZARD DATA (continued)

Unusual fire and explosion hazards:

Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

#### SECTION 5 REACTIVITY DATA

#### Stability:

Stable under normal conditions.

#### Incompatibility:

This product will react with any materials containing active hydrogens, such as water, alcohol, ammonia, amines, alkalies and acids. The reaction with water is very slow under 50°C, but is accelerated at higher temperatures and in the presence of alkalies, tertiary amines, and metal compounds. Some reactions can be violent.

Hazardous decomposition products:

Combustion products: Carbon dioxide, carbon monoxide. Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.

Hazardous polymerization:

May occur. High temperatures in the presence of alkalies, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

# SECTION 6 HEALTH HAZARD ASSESSMENT

#### General:

The health hazard assessment is based on an evaluation of the chemical composition together with information from a search of the scientific literature and other commercial sources.

Ingestion:

The acute oral ID50 in rat is reported to be 5,800 mg/kg. Relative to other materials, this material is classified as "practically nontoxic" by ingestion. In humans, irritation or chemical burns of the mouth, pharynx, esophagus and stomach can develop following ingestion. Injury may be severe and cause death.

Eye contact:

This material is reported to induce chemical burns in rabbit eye studies; a similar degree of eye injury may develop after contact with human eyes.

#### Skin contact:

This material is reported to be severely irritating in rabbit dermal irritation studies and will probably irritate human skin. Skin sensitization and irritation may develop after repeated and/or prolonged contact with human skin.

Skin absorption:

The acute dermal  ${\rm LD}_{50}$  in rabbit is reported to be above 16 g/kg. Systemically toxic concentrations of this product will probably not be absorbed through human skin.

## SECTION 6 HEALTH HAZARD ASSESSMENT (continued)

#### Inhalation:

Vapors and aerosols can irritate eyes, nose and respiratory passages. TDI vapors are easily generated and are lethal to rats via inhalation at concentrations below 10 ppm. A no effect level for rats of about 0.1 ppm was determined from a subacute study. This and other data indicate the vapors and aerosols of TDI are highly toxic relative to the vapors of other compounds. Vapors and aerosols of TDI strongly irritate the upper and lower respiratory tract. Human experience indicates that TDI will induce an asthma-like respiratory sensitization in some individuals. If applications which involve spraying (e.g. aerosols and mists) or if elevated temperatures are used, even higher vapor concentrations may result and introduce a greater degree of risk of inhalation injury. Rat and mouse toxicity and carcinogenicity studies were conducted with two years of inhalation exposure to vapors of TDI at concentrations of 0.05 and 0.15 ppm. No indication of carcinogenic effect was observed. However, mice exposed to 0.15 ppm for two years showed reduced weight gain and signs of irritation in the upper and lower respiratory tract. No other effect of toxicological significance was observed.

#### Other effects of overexposure:

gastric lawage following ingestion.

There are two studies which allege that workers exposed to TDI at or near the current TLV have experienced impaired ventilatory capacities. These findings have not been independently substantiated. The National Toxicology Program (NTP) 4th Annual Report on Carcinogens (1985) lists TDI as a substance that may reasonably be anticipated to be a carcinogen based on a NTP Technical Report. In the cited study, laboratory animals gavaged TDI in corn oil developed cancer. In our view, the inhalation study is of more potential biological relevance to man.

#### First aid procedures:

Skin: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention. Wash contaminated clothing and decontaminate footwear before reuse. Eyes: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and treated by medical personnel.

Inquestion: Do not induce vomiting. Give 1 or 2 glasses of water to drink and refer person to medical personnel. (Never give anything by mouth to an unconscious person.)

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

Note to physician: Probable mucosal damage may contraindicate the use of

## SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 0.2-5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets. All operations should be performed by trained personnel familiar with the hazards of the chemicals used. Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

#### Disposal method:

Slowly stir the isocyanate waste into the decontamination solution described above using 10 parts of the solution for each part of the isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away. Neutralize the waste. Neither the solid nor the liquid portion is a hazardous waste under RCRA, 40 CFR 261.

#### Container disposal:

Drums must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 5-15 liters of decontaminating solution into the drum, making sure the walls are well rinsed. Leave the drum soaking unsealed for 48 hours. Pour out the decontaminating solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal.

## SECTION 8 SPECIAL PROTECTION INFORMATION

TLV® or suggested control value:

The ACGIH TLV, OSHA PEL, and NIOSH recommendation for TDI is 0.005 ppm 8-hour TWA, 0.02 ppm STEL.

#### Ventilation:

If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation". Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

## Respiratory protection:

Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full facepiece or an air supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

#### SECTION 8 SPECIAL PROTECTION INFORMATION (continued)

Protective clothing:

Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before rewearing. The literature indicates that clothing constructed of butyl rubber, Viton, Silver Shield, Saranex coated Tyvek, as well as some nitrile rubber and polyvinyl alcohol (PVA) coated garments have excellent resistance to permeation by TDI. Clothing constructed of Teflon, as well as some garments constructed of nitrile rubber, natural rubber and PVA exhibited limited resistance to permeation by TDI. Some clothing constructed of natural rubber or polyethylene exhibited little resistance to permeation by TDI. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

Eye protection:

Chemical tight goggles and full faceshield.

Other protective equipment:

Eyewash station and safety shower in work area.

#### SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Special precautions or other comments:

Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused the sensitization. Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool area. Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

#### SECTION 10 REGULATORY INFORMATION

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710: All ingredients are on the TSCA Section 8(b) Inventory.

CERCLA and SARA Regulations (40 CFR 355, 370, and 372):
Section 313 Supplier Notification. This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372: 100% TDI (CAS 584-84-9 and 91-08-7).

State Regulations:

California Proposition 65: No warnings are necessary.

The information herein is given in good faith but no warranty, expressed or implied, is made.

## SECTION 4 FIRE AND EXPLOSION HAZARD DATA (continued)

Unusual fire and explosion hazards:

Water contamination will produce carbon dioxide. Do not reseal contaminated containers in pressure buildup may rupture them.

#### SECTION 5 REACTIVETY DATA

Stability:

Stable under normal condition

Incompatibility:

This product will react with any materials containing active hydrogens, such as water almohol amonia, amines, alkalies and acids. The reaction with water is very slow under 50°C, but is accelerated at higher temperatures and in the presence of alkalies, tertiary amines, and metal compounds. Some reactions can be violent.

#### Hazardous decomposition products:

Combustion products: Carbon dioxide, carbon monoxide. Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.

#### Hazardous polymerization:

May occur. High temperatures in the presence of alkalies, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

#### SECTION 6 HEALTH HAZARD ASSESSMENT

#### General:

This health hazard assessment is based on information from commercial and scientific literature.

#### Ingestion:

The acute oral LD50 in rat is reported to be above 10,000 mg/kg. Relative to other materials, a single dose of this product is practically nontoxic by ingestion. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion.

#### Eye contact:

This material will probably irritate human eyes following contact.

#### Skin contact:

No irritation is likely to develop following short contact periods with human skin. Skin sensitization and irritation may develop after repeated and/or prolonged contact with human skin. Prolonged or repeated skin contact with MDI can induce delayed skin reactions several hours after overexposure.

#### Skin absorption:

Systemically toxic concentrations of this product will probably not be absorbed through human skin.

#### SECTION 6 HEALTH HAZARD ASSESSMENT (continued)

#### Inhalation:

Vapors and aerosols can irritate eyes, nose and respiratory passages. Severe overexposure may lead to pulmonary edema. MDI can induce respiratory sensitization with asthma-like symptoms similar to those induced by TDI (toluene diisocyanate). Symptoms include chronic cough, tightness of chest with difficulty in breathing. These symptoms may be immediate or delayed up to several hours after exposure. There are reports that chronic exposures may result in permanent decreases in lung function.

#### Other effects of overexposure:

No other adverse clinical effects have been associated with exposures to this material.

#### First aid procedures:

Skin: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention. Eyes: Immediately flush with plenty of water for at least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

<u>Inquestion</u>: Give 1 or 2 glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person.)

<u>Inhalation</u>: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

#### SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled:

Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 0.2-5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets. All operations should be performed by trained personnel familiar with the hazards of the chemicals used. Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

#### Disposal method:

Slowly stir the isocyanete waste into the decontamination solution described above using 10 parts of the solution for each part of the isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away. Neutralize the waste. Neither the solid nor the liquid portion is a hazardous waste under RCRA, 40 CFR 261.

#### SECTION 7 SPILL OR LEAK PROCEDURES (continued)

#### Container disposal:

Drums must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 5-15 liters of decontaminating solution into the drum, making sure the walls are well rinsed. Leave the drum soaking unsealed for 48 hours. Pour out the decontaminating solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal.

#### SECTION 8 SPECIAL PROTECTION INFORMATION

#### TLV® or suggested control value:

No ACGIH TLV or OSHA PEL is assigned to this mixture. Control of exposure to below the TLV for the ingredients (see Section 2) may not be sufficient. Minimize exposure in accordance with good hygiene practice. ACGIH TLV for MDI is 0.005 ppm 8-hour TWA. The OSHA PEL for MDI is 0.02 ppm, ceiling. NIOSH recommends 0.005 ppm TWA and 0.02 ppm STEL. These control limits do not apply to previously sensitized individuals or to individuals with existing respiratory disease, such as chronic bronchitis, emphysema, or asthma. Sensitized individuals should be removed from any further exposure.

#### Ventilation:

If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation." Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

#### Respiratory protection:

Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full facepiece, or an air-supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

#### Protective clothing:

Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before rewearing.

Testing of some commercially available protective clothing indicates that clothing constructed of butyl rubber, nitrile rubber, Saranex® coated Tyvek® and some neoprene garments have excellent resistance to permeation by MDI. Clothing constructed of neoprene/latex rubber and some PVC garments exhibited limited resistance to permeation by MDI. Clothing constructed of polyethylene, latex rubber, PVC or polylaminated Tyvek® showed little resistance to permeation by MDI. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

#### SECTION 8 SPECIAL PROTECTION INFORMATION (continued)

Eye protection:

Chemical tight goggles; full faceshield in addition if splashing is possible.

Other protective equipment:

Eyewash station and safety shower in work area.

#### SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

Special precautions or other comments:

Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused the sensitization. Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool area. Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

#### SECTION 10 REGULATORY INFORMATION

TSCA (Toxic Substances Control Act) Regulations, 40 CFR 710: All ingredients are on the TSCA Section 8(b) Inventory.

CERCLA and SARA Regulations (40 CFR 355, 370, and 372):

Section 313 Supplier Notification. This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372: MDI (CAS 101-68-8), 50%.

#### State Regulations:

California Proposition 65: No warnings are necessary.

The information herein is given in good faith but no warranty, expressed or implied, is made.

4.03	Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.	<b>)</b>
	Yes	
	For each activity that uses the listed substance, circle all the applicable number(s	_

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

Physical State Liquified Activity Solid Slurry Liquid Gas Gas Manufacture = N/A1 2 3 5 Import = N/A1 2 3 5 **Process**  $= Y^{-}$ 1 2 5 = YStore 2 1 5 = YDispose 1 2 5 Transport 1 2 = Y5 4

	Mark	(X)	this	box if	you	attach	a	continuation	sheet.
--	------	-----	------	--------	-----	--------	---	--------------	--------

4.05	Particle Size If the listed substance exists in particulate form during any of the
	following activities, indicate for each applicable physical state the size and the
	percentage distribution of the listed substance by activity. Do not include
	particles ≥10 microns in diameter. Measure the physical state and particle sizes for
	importing and processing activities at the time you import or begin to process the
CBI	listed substance. Measure the physical state and particle sizes for manufacturing
	storage, disposal and transport activities using the final state of the product.

Physical State		Manufacture	Import	Process	Store	Dispose	Transport
Dust	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns	N/A	N/A	N/A	N/A	N/A	N/A
	5 to <10 microns	N/A	_N/A	N/A	N/A_	N/A	<u>N/A</u>
Powder	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns	N/A	N/A	N/A	N/A	N/A_	N/A
	5 to <10 microns	N/a	N/A	N/A	N/A_	N/A	<u>N/A</u>
Fiber	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns	N/A	N/A	N/A	N/A	N/A	N/A
	5 to <10 microns	N/A	N/A	N/A	N/A	N/A	N/A
Aerosol	<1 micron	N/A	N/A	N/A	N/A	N/A	N/A
	1 to <5 microns	N/A	N/A	N/A	N/A	N/A	N/A
	5 to <10 microns	N/A	N/A	N/A	N/A	N/A	N/A

	~	
Mark (X) this box if you attach a continuation sheet.		

Name of Additive	Inhibitor or <u>Stabilizer<sup>1</sup></u>	Amount Normally Added (ppm or %)	Duration of Effectivenes (specify units)	
N/A	N/A	N/A		
Indicate if hazard infor	mation/MSDS has been su	ıbmitted in lieu	of	
response by circling the				
response by circling the	appropriate response.		•••••	
	appropriate response.			
Yes	appropriate response.			
Yes  No  1 Use the following codes to do  I = Inhibitor	appropriate response.			
Yes  No  1 Use the following codes to do  I = Inhibitor	appropriate response.			
Yes  No  1 Use the following codes to do  I = Inhibitor	appropriate response.			
Yes  No  1 Use the following codes to do  I = Inhibitor	appropriate response.			

[ ] Mark (X) this box if you attach a continuation sheet.

### SECTION 5 ENVIRONMENTAL FATE

tolysis:  orption spectrum coefficient (peak)  ction quantum yield, 6  ect photolysis rate constant, k <sub>p</sub> , at  dation constants at 25°C:  10 <sub>2</sub> (singlet oxygen), k <sub>ox</sub>	N/A	at N/A	nm			
ction quantum yield, 6	N/A	at N/A	nm			
ect photolysis rate constant, k <sub>p</sub> , at dation constants at 25°C:  10 <sub>2</sub> (singlet oxygen), k <sub>ox</sub>						
dation constants at 25°C:  10 <sub>2</sub> (singlet oxygen), k <sub>ox</sub>	N/A 1/hr	N/A1				
dation constants at 25°C:  10 <sub>2</sub> (singlet oxygen), k <sub>ox</sub>			latitud			
	N/A		1/M			
RO <sub>2</sub> (peroxy radical), k <sub>ox</sub>	N/A					
e-day biochemical oxygen demand, BOD <sub>5</sub>						
Biotransformation rate constant:						
bacterial transformation in water, $k_b \dots $	N/A		_' 1/hr			
ify culture	N/A		_			
olysis rate constants:						
base-promoted process, k <sub>B</sub>	N/A		1/H 1			
acid-promoted process, k,	N/A	· · · · · · · · · · · · · · · · · · ·	_ 1/M			
neutral process, k <sub>N</sub>	,					
ical reduction rate (specify conditions)_	N/A		_			
r (such as spontaneous degradation)	N/A		_			
t -	transformation rate constant:  bacterial transformation in water, k <sub>b</sub> cify culture	bacterial transformation in water, k <sub>b</sub> N/A           cify culture	transformation rate constant:  bacterial transformation in water, k <sub>b</sub> N/A  cify culture			

5.02	a.	Specify the half-li	ife of the listed	substance in the	following med	ia.
		<u>Media</u>			e (specify uni	
		Groundwater			N/A	
		Atmosphere	<del></del>		N/A	
		Surface water			N/A	
		Soil			N/A	
	b.	Identify the listed life greater than 2	l substance's know 4 hours.	wn transformation	products that	have a half-
		CAS No.	Name	Half-li (specify	- <del>-</del>	Media
		N/A	N/A	N/A	in _	N/A
					in	
					in	•
					in	
5.03		cify the octanol-wat				
5.04	Spec	cify the soil-water	partition coeffic	ient, K <sub>d</sub>	N/A	at 25°0
		l type				
5.05	Spec	cify the organic carl	bon-water partiti	on	N/A	at 25°C
5.06	Spec	cify the Henry's Law	Constant, H		N/A	atm-m³/mole
[_]	Mark	x (X) this box if you	ı attach a contin	uation sheet.		

Bioconcentration Factor	<u>Species</u>	<u>Test<sup>1</sup></u>
N/A	N/A	N/A
 1		
<sup>1</sup> Use the following codes to des	signate the type of test:	
<pre>F = Flowthrough S = Static</pre>		
		•
	•	

	SECTION 6 ECONOMIC AND FINANCIAL INFORMATIO	
6.01	Company Type Circle the number which most appropriately de	escribes your company.
CBI	CorporationN/A	
[_]	Sole proprietorship	•
	Partnership	•
	Other (specify)	•••••
6.02 CBI	At the end of the reporting year, were you constructing addit site that were not yet in operation at the end of the reportinow being used or will be used in the future for manufacturing processing the listed substance? Circle the appropriate responses	ng year, but which are
[_]	Yes	•••••
~	No	
	List all of the product types that you manufacture that conta as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The tota percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.	ity dedicated to the l of all capacity late capacity of the
5.03	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.	ity dedicated to the l of all capacity late capacity of the ntain the listed
	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.  Product Type	ity dedicated to the l of all capacity late capacity of the ntain the listed  2 Total Capacity
	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.	ity dedicated to the l of all capacity late capacity of the ntain the listed
	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.  Product Type	ity dedicated to the l of all capacity late capacity of the ntain the listed  2 Total Capacity
	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.  Product Type	ity dedicated to the l of all capacity late capacity of the ntain the listed  2 Total Capacity
	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.  Product Type	ity dedicated to the l of all capacity late capacity of the ntain the listed  2 Total Capacity
	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.  Product Type	ity dedicated to the l of all capacity late capacity of the ntain the listed  2 Total Capacity
	as a raw material, and the percentage of the name-plate capac listed substance that each product type represents. The total percentiles should equal 100 percent. State the total name-p process type(s) used to manufacture all product types that co substance.  Product Type	ity dedicated to the l of all capacity late capacity of the ntain the listed  Z Total Capacity  N/A

6.04 CBI	For each market listed below, state the listed substance sold or transfe	the quantity sold and the rred in bulk during the r	e total sales value of ceporting year.
[_]		Quantity Sold or	Total Sales
	Market	Transferred (kg/yr)	Value (\$/yr)
	Retail sales	N/A	N/A
	Distribution Wholesalers	N/A	N/A
	Distribution Retailers	N/A	N/A
	Intra-company transfer	N/A	N/A
	Repackagers	N/A	N/A
	Mixture producers	N/A	N/A
	Article producers	N/A	N/A
	Other chemical manufacturers or processors	N/A	N/A
	Exporters	N/A	N/A
	Other (specify)		,
		N/A	N/A
6.05 <u>CBI</u> [X]	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is early our current operation, and which performance in its end uses.	ne cost of each substituteconomically and technolo	e. A commercially gically feasible to use
	Substitute		Cost (\$/kg)
	ICI Polyurethanes: (75/25 ISO)		\$ .50
	Rubinate: L.F168		
Ä			
[ <u>X</u> ]	Mark (X) this box if you attach a con	tinuation sheet.	



## MATERIAL SAFETY DATA SHEET

ICI POLYURETHANES GROUP ● Mantua Grove Road ● W. Deptford, NJ 08066 ● (609) 423-8300

800-424-9300 (24 hours) for Spills, Leaks, Fire & Exposure (CHEMTREC) 800-327-8633 (24 hours) Medical Emergencies or Inquiries 800-257-5547 (daytime) Safety, Health, and Environmental Technical Assistance

#### SECTION 1 NAME AND HAZARD SUMMARY

Material name:

**RUBINATE ® LF-168** 

Hazard summary (as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200):

Physical hazards: Unstable

Health hazards: Irritant (eye, skin, respiratory passages, skin sensitizer), inhalation (TLV) Based on MDI – harmful (respiratory sensitizer, lung injury).

Read the entire MSDS for a more thorough evaluation of the hazards.

SECTION 2 INGREDIENTS	%	TLV (ACGIH)
4,4'-Diphenylmethane-diisocyanae (MDI, CAS 101-68-8) Modified MDI -	75 25	0.005 ppm Not listed

Ingredients not precisely identified are proprietary or nonhazardous. Values are not product specifications.

#### SECTION 3 PHYSICAL DATA

Appearance and odor: Pale yellow liquid with faint odor

Boiling point: Decomposes at 646°F, 341.1°C Vapor pressure (mm Hg at 20°C): <0.0001

Vapor density (air = 1): No data

Solubility in water: Reacts

pH: No data

Specific gravity: 1.2

% Volatile by volume: No data

#### SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash point: 400°F, 204°C (COC) Autoignition temp.: No data Flammable limits (STP): No data

## SECTION 4 FIRE AND EXPLOSION HAZARD DATA (continued)

#### Extinguishing media:

Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use very large quantities. The reaction between water and hot isocyanate may be vigorous.

#### Special fire fighting protective equipment:

Self-contained breathing apparatus with full facepiece and protective clothing.

#### Unusual fire and explosion hazards:

Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

#### SECTION 5 REACTIVITY DATA

#### Stability:

Stable under normal conditions.

#### Incompatibility:

This product will react with any materials containing active hydrogens, such as water, alcohol, ammonia, amines, alkalies and acids. The reaction with water is very slow under 50°C, but is accelerated at higher temperatures and in the presence of alkalies, tertiary amines, and metal compounds. Some reactions can be violent.

#### Hazardous decomposition products:

Combustion products: Carbon dioxide, carbon monoxide. Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.

#### Hazardous polymerization:

May occur. High temperatures in the presence of alkalies, tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers,

#### SECTION 6 HEALTH HAZARD ASSESSMENT

#### General:

No toxicity information is available on this specific preparation; this health hazard assessment is based on information that is available on the properties of its components.

#### Ingestion:

The acute oral  $LD_{50}$  in rat is probably above 10,000 mg/kg. Relative to other materials, a single dose of this product is practically nontoxic by ingestion. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion.

#### Eye contact:

This material will probably irritate human eyes following contact.

#### Skin contact:

No irritation is likely to develop following short contact periods with human skin. Skin sensitization and irritation may develop after repeated and/or prolonged contact with human skin. Prolonged or repeated skin contact with MDI can induce delayed skin reactions several hours after overexposure.

#### Skin absorption:

Systemically toxic concentrations of this product will probably not be absorbed through human skin.

#### SECTION 6 HEALTH HAZARD ASSESSMENT (continued)

#### Inhalation:

Vapors and aerosols can irritate eyes, nose and respiratory passages. Severe overexposure may lead to pulmonary edema. MDI can induce respiratory sensitization with asthma-like symptoms similar to those induced by TDI (toluene diisocyanate). Symptoms include chronic cough, tightness of chest with difficulty in breathing. These symptoms may be immediate or delayed up to several hours after exposure. There are reports that chronic exposures may result in permanent decreases in lung function.

#### Other effects of overexposure:

No other adverse clinical effects have been associated with exposures to this material.

#### First aid procedures:

Skin: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention.

Eyes: Immediately flush with plenty of water for at least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

<u>Ingestion</u>: Give 1 or 2 glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person.)

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

#### SECTION 7 SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled:

Wear skin, eye and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 0.2-5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets. All operations should be performed by trained personnel familiar with the hazards of the chemicals used. Treat the spill area with the decontamination solution, using about 10 parts of the solution for each part of the spill, and allow it to react for at least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. For major spills, call CHEMTREC (Chemical Transportation Emergency Center) at 800-424-9300.

#### Disposal method:

Slowly stir the isocyanate waste into the decontamination solution described above using 10 parts of the solution for each part of isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away. Neutralize the waste. Neither the solid nor the liquid portion is a hazardous waste under RCRA, 40 CFR 261.

#### Container disposal:

Drums must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 5-15 liters of decontaminating solution into the drum, making sure the walls are well rinsed. Leave the drum soaking unsealed for 48 hours. Pour out the decontaminating solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal.

#### SECTION 8 SPECIAL PROTECTION INFORMATION

#### TLV® or suggested control value:

No ACGIH TLV or OSHA PEL is assigned to this mixture. Control of exposure to below the TLV for the ingredients (see Section 2) may not be sufficient. Minimize exposure in accordance with good hygiene practice. ACGIH TLV for MDI is 0.005 ppm 8-hour TWA. The OSHA PEL for MDI is 0.02 ppm, ceiling. NIOSH recommends 0.005 ppm TWA and 0.02 ppm STEL. These control limits do not apply to previously sensitized individuals or to individuals with existing respiratory disease, such as chronic bronchitis, emphysema, or asthma. Sensitized individuals should be removed from any further exposure.

#### Ventilation:

If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation." Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

#### Respiratory protection:

Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with a full facepiece or an air-supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

#### Protective clothing:

Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before rewearing.

Testing of some commercially available protective clothing indicates that clothing constructed of butyl rubber, nitrile rubber, Saranex® coated Tyvek® and some neoprene garments have excellent resistance to permeation by MDI. Clothing constructed of neoprene/latex rubber and some PVC garments exhibited limited resistance to permeation by MDI. Clothing constructed of polyethylene, latex rubber, PVC or polylaminated Tyvek® showed little resistance to permeation by MDI. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH.

#### Eye protection:

Chemical tight goggles; full faceshield in addition if splashing is possible.

#### Other protective equipment:

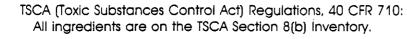
Eyewash station and safety shower in work area.

#### SECTION 9 SPECIAL PRECAUTIONS OR OTHER COMMENTS

#### Special precautions or other comments:

Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused the sensitization. Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool area, Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

#### SECTION 10 REGULATORY INFORMATION



CERCLA and SARA Regulations (40 CFR 355, 370, and 372):

Section 313 Supplier Notification. This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372: 75% MDI (CAS 101-68-8).

State Regulations:

California Proposition 65: No warnings are necessary.

The information herein is given in good faith but no warranty, expressed or implied, is made.

The ICI Polyurethanes Group is a business unit of ICI Americas Inc.

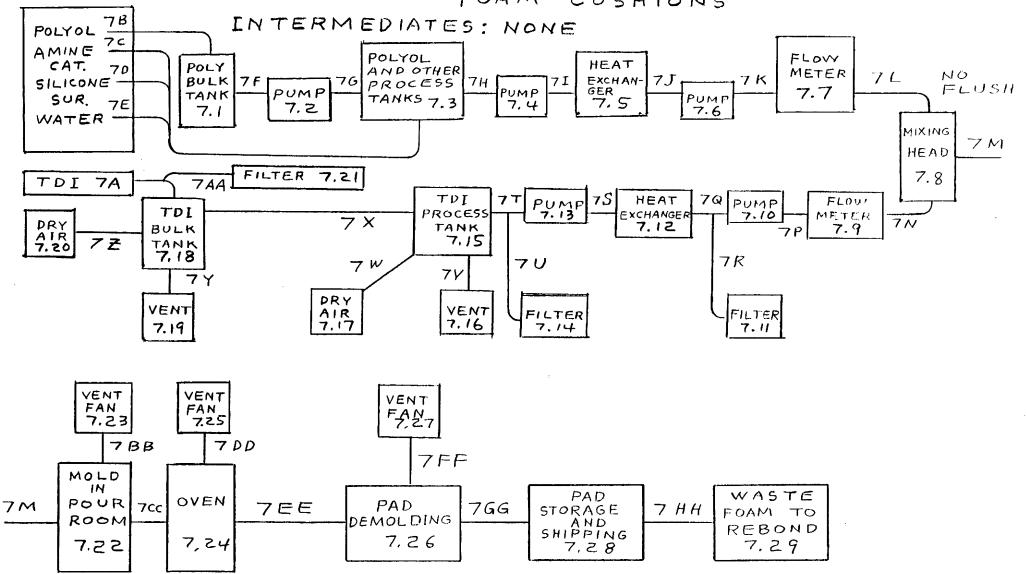
	SECTION 7 MANUFACTURING AND PROCESSING INFORMATION							
Gene	General Instructions:							
provi	For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.							
PART	A MANUFA	ACTURING AND PRO	OCESSING PROCESS TYPE DES	CRIPTION				
7.01 <u>CBI</u>	In accor major (g	dance with the greatest volume	instructions, provide a ) process type involving	process block flow diagram s the listed substance.	showing the			
	Process	type	MANUFACTURE OF POLYURET	HANE FOAM CUSHIONS				
ŧ			SEE ATTACHED BLOCK	FLOW DIAGRAM	-			
					•			
	·			•				
		,						

[ ] Mark (X) this box if you attach a continuation sheet.

7.02 <u>CBI</u>	In accordance showing substance	dance with each of the ce.	th the ins the three	tructions major (gr	, provide a s eatest volume	eparate process ) process types	block flow diagram involving the listed
	<b>D</b>	•		<u>.</u> .	(4)	( - 51)	
(_)	Process	type		only one	(1) process:	(see 7.01)	
							•
					·,		
	•						
			•		•		
		<del>-</del>	<del>.,</del>		,		
	Mark (X)	this box	if you at	ttach a co	ntinuation sh	eet.	

## 7.01 PROCESSOR

PROCESS TYPE: MANUFACTURE OF POLYURETHANE FOAM CUSHIONS



7.03 PROCESS EMISSION STREAMS AND NO EM 15510N POINTS FLUSH MIXING 7M HEAD FILTER 7.21 7.8 TDI '7A 70 PUMP TUI HEAT PUMP FLOW TDI PROCESS EXCHANGER METER 7.9 7.10 7XDRY AIR 7.20 711 TANK 7.12 BULK 72 TANK 7.15 7.18 7Rフリ 7 W 7*Y* 7 Y PRY VENT VENT A1R 7.17 FILTER FILTER 7.11 7,16 7.19 7.14 VENT VENT VENT FAN FAN 7.25 FAN7 7.23 7 B B 7 DD

7FF

76G

PAD

DEMOLDING 7, 2 6

MOLD

POUR

ROOM

7.22

7M

OVEN

7,24

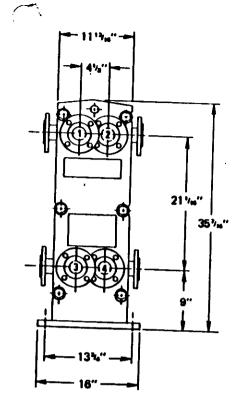
7 E E

7cc

SECTION II - C

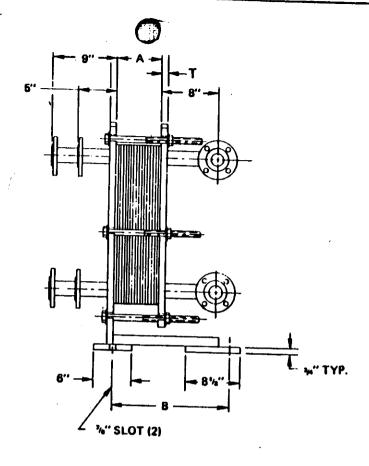
(10.2)

COMPOUND "A" HEAT EXCHANGER



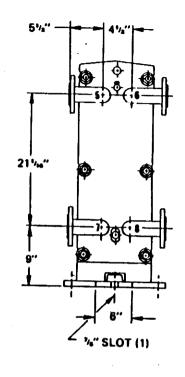
Item A:

Nozzle Location	Function		Size	Material
1	Isocynate OUT	2	11 3	16L
2.	Glycol 30% IN	_		316L
3	Isocynate IN			316L
4	Glycol 30% OUT		_	316L
5	NA /	ŀ		
6	NA			
. 7	NA			
8	NA			



A =	2.441-2	.598
в -	23.938	
<u>c -</u>		
Ţ-	1.000	(Min.)

ALL DIMENSIONS APPROXIMATE NOT TO BE USED FOR CONSTRUCTION PURPOSES



Design Press:	125	Orio
Test Press	200	Psig.
Design Temp:	100	0 <sub>E</sub>
Plate Mat'l:	· 304SS	
Gasket Mat'l:	NB R	
No. of Plates:	20	1
Surface Area:	16.9	Sq. Ft.
Weight:	356	
Nozzies: 150 Iti	ASA C.S. louse Flange	e with Lap Joint Stub Enc

Nozzies	: 150 HI ASA C.S.	louse Flange with Lap Joint Stub Ent
1	N — TRANTER, inc., , Texas, U.S.A.	
SUPERCH	ANGER MODEL	UX-016-UJ-20
Customer:	Mobay	
Date:	09-10-82	Proposal No. SC-19081-06

## **SPECIFICATION SHEET**

- "STOMER. MOBAY

.PITTSBURG, PA 15205 ATTN: JACK JENNY PROPOSAL NO. SC-19081-6 ITEM NUMBER. A

ENGINEER.

DATE.

C.F. 9/02/82

MODEL NO. UX-016 FRAME TYPE. UJ PLATES PER UNIT. 20

NO. OF UNITS IN PARALLEL. 1 HEAT TRANSFER AREA

16.9 SQ/FT PER UNIT

PART NUMBER. 16UJ0201NN1402140

*	PERFORMANCE	*+	HOT SIDE	***	COLD SIDE	**	
	FLUID CIRCULATED	*	ISOCYNATE		GLYCOL 30%	*	
	TOTAL FLOW RATE	×	15.00	×	15.00	*	GPM
	UNIT FLOW RATE	*	15.00	*	15.00	*	GPM
	SPECIFIC HEAT	¥.	0.430	*	0.770	*	BTU/LB.DEG.F
	SPECIFIC GRAVITY	×	. 1-100	*	1.070	*	D.O. CD. DEC.
	THERMAL CONDUCTIVITY	¥	0.070	*	0.250	*	BTU/HR.FT.DEG.F
	VISCOSITY	长	303.420	*	0.415	*	C.P. AT AVG. TEMP
	INLET TEMPERATURE	ĸ	78.00	*	55.00	*	DEG. F
	OUTLET TEMPERATURE	×	75.00	*	54.73	*	DEG. F
	PRESSURE DROP	*	24.48	*	1.07	*	PSIG .
	OPERATING PRESSURE	*	0	**	0	₩	PSIG
<u> </u>	HEAT EXCHANGED	ĸ×	*****	103			BTU/HR/UNIT

CONSTRUCTION

DESIGN PRESSURE	×	125	×	PSIG
TEST PRESSURE	₩	200	¥.	PSIG
DESIGN TEMPERATURE	¥	100	*	DEG. F.
UNIT NET WEIGHT	*	354.0	¥	POLINDS

\* UNIT DIMENSIONS

Α	(MAX)	ĸ		2.598
A	(MIM)	ж	· •	2.441
B		*		10.938
C		*		*****
T		*		1000

\* MATERIALS

PLATES \* 304 GASKETS \* NBR NOZZLES \* 316L

FRAME \* CS EPOXY PAINTED
BARS \* STAINLESS STEEL CLAD

BOLTS \* ZN PLATED CS

PASS ARRANGEMENTS
HOT \*\*\*\*\* COLD
O X O O X O
10 X 1 7 X 1

\* REMARKS:



# EXCHANGEH ENGINEERING SPECIFIC

TO THE OF E Sheet | Ot |

_	obay Chemical			ENGINEENIN	- 01 2011 1021			Project	· Area -	item
F	Froject No. 636	Location Comp	ton. Ca	lifornia	No. F	Req'd.	Spec. No.	6260	MS-003	
Ţ	MEM NAME Compound "A" Heat Exchanger					Item. No.	o von-	-M2=003		
	MOBAY REF. STDS., (15.1.1) (15.1.10) (☐ 9.1) (☐ 9.2) N/A					1	00	12		
Ľ	SERVICE OF UNIT	Chemical H				R. W/QUOTE *			· •	
-	SIZE			NNECTED IN		SERIES	Equip. No.			
-	SHELLS/UNIT	SQ. FT. SL			SURF./SHELL					
H	Note: No	copper or	copper	alloys i	n contac	ct with	<u>wetted</u>	parts		
-		DRMANCE OF ONE UNI	T		SHELL SIDE			TUBE S		
1-	LUID NAME			Isocyan	ate		30% (	lycol	/Water	
-	PLUID QUANTITY, 1 VAPOR (IN/QUT		LB/HR.		<del></del>			<del></del>		
-	LIQUID	,		9000	(15 (	'DM'				
-	STEAM			3000	(13 (	3FM)				
-	WATER						9034		(12 GPM	<u>~~</u>
	Tank Vo	lume		120 Gal			0034		IIZ GPI	11
I	EMPERATURE (IN	/OUT)	*F	78	75	_	55			
<u>s</u>	PECIFIC GRAVITY	•		1.1			1.7			
_⊻	ISCOSITY, LIQUID		СР	300	350		4.1			
_	OLECULAR WEIG									
_		ONCONDENSABLE				<u> </u>				
-	PECIFIC HEAT		BTU/LB °F	.43			.78			
	HERMAL COND.		HR SQ. FT. °F	.07			.25			
_	ATENT HEAT (LET PRESSURE		BTU/LB @ °F PSIG	90			50			
_	ELOCITY		FT./SEC.	30			50			
_	RESS. DAOP, ALLO	OW./CALC.	PSI					· /		
_	OULING RESISTAN									
Н	EAT EXCHANGED			BTU/HR.	MTD (CORRECT	ED)				°F
TF	RANSFER RATE -	SERVICE		CLEAN		DESIGN:			BTU/HR. SC	). FT. °F
C	ONSTRUCTION DA	NTA .	SHELL	L SIDE		TUBE SIDE	SKETC	H (BUNDLE	/NOZZLE ORIE	NT.)
_	ESIGN/TEST PRES		150	/ 300	150	/ 300	Type	:		
_	ESIGN TEMPERAT		200		200		Plat	e and	Frame	
	O. PASSES PER SI		<u> </u>	· · · · · · · · · · · · · · · · · · ·	<del> </del>		-			
_		INCHES	2, 15	O# FLG			ł			
	ORR. ALLOWANCE	I IM	1 2 -13	U# P1.(*	2"-15	O# FT.G				
	ONNECTIONS	OUT			1 24 15					
RA		OUT		O# FLG	2"-15	0# FLG				
	ONNECTIONS ZE AND	OUT		O# FLG	2"-15	0# FLG		L: <del>&lt;                                   </del>	<u>~ 80 </u>	<b>→</b> 45
TU	ONNECTIONS ZE AND ATING	OUT	2"-15	O# FLG	1	O#_FT.G FT.: PITCH		ı.: <del>( )</del> 30 <i>-</i>	<del>^</del> 60 <del>-</del> 90≺	<b>→</b> 45
דט דט	ONNECTIONS ZE AND ATING IBE NO.	OUT	2"-15	O# FLG	I.: LENGTH	0# FT.G FT.: PITCH 304 SS		l.: <del>(</del> 30 <del>/</del>	00 € • 00 • • 00 • • 00 • • 00 • • 00 • • 00 • • 00 • 0	
TU TU	DANECTIONS ZE AND ATING JBE NO. JBE TYPE	OUT INTERMEDIATE OD IN.:	2"-15 THK (MIN./AVG	O# FLG	I.: LENGTH MATERIAL	O# FLG  FT.: PITCH  304 SS		l.: <del>(</del> 30 <del>/</del>		
TU SH CH	DANECTIONS ZE AND ATING IBE NO. IBE TYPE	OUT INTERMEDIATE OD IN.:	2"-15 THK (MIN./AVG	O# FLG	I.: LENGTH  MATERIAL  SHELL COVER	O# FLG  FT.: PITCH  304 SS  VER		l.: <b>←</b> 30 <del>/</del>		
TU SH CH TU FL	DANECTIONS ZE AND ATING JBE NO. JBE TYPE JELL JANNEL OR BONN JBESHEET-STATION OATING HEAD CO	OUT INTERMEDIATE OD IN.: ET	2"-15 THK (MIN./AVG	O# FLG	L: LENGTH  MATERIAL  SHELL COVER  CHANNEL COVER  TUBESHEET-F	O# FLG  FT.: PITCH  304 SS  VER	Plates			
TU SH CH TU FLU BA	DANECTIONS ZE AND ATING JBE NO. JBE TYPE JELL JANNEL OR BONN JBESHEET-STATION OATING HEAD CO FFLES-CROSS	OUT INTERMEDIATE OD IN.: ET	2"-15 THK (MIN./AVG	O# FLG	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA)	FT.: PITCH 304 SS R VER LOATING PROTECTION				EMQV.)
TU SH CH TU FLG BA	DINNECTIONS ZE AND ATING JBE NO. JBE TYPE JELL JANNEL OR BONN JBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG	OUT INTERMEDIATE OD IN.: ET	2"-15 THK (MIN./AVG	O# FLG	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE	FT.: PITCH 304 SS R VER LOATING PROTECTION	Plates	С	(INTEQ.) (RI	EMQV.)
TU SH CH TU FLO BA	DINNECTIONS ZE AND ATING IBE NO. IBE TYPE IELL IANNEL OR BONN IBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG IPPORTS-TUBE	OUT INTERMEDIATE  OD IN.:  ET NARY VER	2"-15 THK (MIN./AVG	O# FLG	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND	FT.: PITCH 304 SS R VER LOATING PROTECTION	Plates		(INTEQ.) (RI	EMQV.)
TU SH CH TU FLU BA BA SU BY	DINNECTIONS ZE AND ATING IBE NO. IBE TYPE IELL IANNEL OR BONN BESHEET-STATIOI OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA	OUT INTERMEDIATE  OD IN.:  ET NARY VER	2"-15 THK (MIN./AVG	O# FLG	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH	FT.: PITCH 304 SS R VER LOATING PROTECTION	Plates	С	(INTEQ.) (RI	EMOV.)
TU SH CH TU FLU BA BA SU BY	DINNECTIONS ZE AND ATING IBE NO. IBE TYPE IELL IANNEL OR BONN IBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG IPPORTS-TUBE	OUT INTERMEDIATE  OD IN.:  ET NARY VER	2"15 THK (MIN./AVG	O# FT.G	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH	FT.: PITCH 304 SS  VER LOATING PROTECTION	Plates SPACING: C/	С	(INTEQ.) (RI	EMQV.)
TU SH CH TU FLU BAA BAA SU BY	DANECTIONS ZE AND ATING JBE NO. JBE TYPE JELL JANNEL OR BONN BESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA PANSION JOINT	OUT INTERMEDIATE OD IN.: ET NARY VER	2"15 THK (MIN./AVG	O# FLG	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH TYPE	FT.: PITCH 304 SS  VER LOATING PROTECTION	Plates	С	(INTEQ.) (RI	EMQV.)
TU SH CH TU FLU BAA BAA SU BY	DINNECTIONS ZE AND ATING JIBE NO. JIBE TYPE JIBELL JANNEL OR BONN JIBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA PANSION JOINT -INLET NOZZLE	OUT INTERMEDIATE OD IN.: ET WARY VER  NGEMENT	2"15 THK (MIN./AVG	O# FT.G	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH TYPE TUBE SIDE	FT.: PITCH 304 SS  VER LOATING PROTECTION	Plates SPACING: C/	С	(INTEQ.) (RI	EMQV.)
TU SH CH TU FLU BA BA SU EXI PY GA	DINNECTIONS ZE AND ATING JBE NO. JBE TYPE JELL JANNEL OR BONN JBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA PANSION JOINT JOIN	OUT INTERMEDIATE  OD IN.:  ET NARY VER  NGEMENT  DE NBR HEAD	2"15 THK (MIN./AVG	O# FT.G	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH TYPE TUBE SIDE	FT.: PITCH 304 SS  VER LOATING PROTECTION  BEET JOINT  BI  GASKETS FOR	Plates SPACING: C/	С	(INTEQ.) (RI	EMQV.)
TU SH CH TU FLU BAA BAU BY GA	DINNECTIONS ZE AND ATING IBE NO. IBE TYPE IELL IANNEL OR BONN IBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG IPPORTS-TUBE PASS SEAL ARRA PANSION JOINT -INLET NOZZLE SKETS-SHELL SIC -FLOATING DE REQUIREMEN IGHT/SHELL	OUT INTERMEDIATE  OD IN.:  ET VARY VER  NGEMENT  DE NBR HEAD TS	2"-15 THK (MIN./AVG	O# FI.G  OD IN.  OD IN.  WCUT  UNDLE ENTRANCI	MATERIAL SHELL COVER CHANNEL CO' TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH TYPE TUBE SIDE SPARE SET OF	FT.: PITCH 304 SS  VER LOATING PROTECTION  BEET JOINT  BI GASKETS FOR	Plates  SPACING: C/	С	(INTEQ.) (RI	EMQV.)
TU SH CH TU FLU BAA BAU BY GA	DINNECTIONS ZE AND ATING JIBE NO. JIBE TYPE JIELL JANNEL OR BONN JIBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA PANSION JOINT JINLET NOZZLE SKETS-SHELL SID FLOATING DE REQUIREMEN GIGHT/SHELL NT EXT. CARBON	OUT INTERMEDIATE  OD IN.:  ET NARY VER  NGEMENT  DE NBR HEAD	2"-15 THK (MIN./AVG	O# FI.G  OD IN.  OD IN.  WCUT  UNDLE ENTRANCI	MATERIAL SHELL COVER CHANNEL CO' TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH TYPE TUBE SIDE SPARE SET OF	FT.: PITCH 304 SS VER LOATING PROTECTION  BE GASKETS FOR TE BR	SPACING: CA	c	(INTEQ.) (RI	EMOV.)
TU SH CH TU FLU BAA BAA SU BY GA	DINNECTIONS ZE AND ATING JIBE NO. JIBE TYPE JIELL JANNEL OR BONN JUBESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA PANSION JOINT -INLET NOZZLE SKETS-SHELL SID -FLOATING DE REQUIREMEN JIGHT/SHELL INT EXT. CARBON 6	OUT INTERMEDIATE  OD IN.:  ET VARY VER  NGEMENT  DE NBR HEAD TS	2"-15 THK (MIN./AVG	O# FI.G  OD IN.  OD IN.  WCUT  UNDLE ENTRANC!  ELLED WITH WATE!  SPEC. TO SUIT DE	MATERIAL SHELL COVER CHANNEL CO TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH TYPE TUBE SIDE SPARE SET OF	FT.: PITCH 304 SS  VER LOATING PROTECTION  BEET JOINT  BI GASKETS FOR	SPACING: CA	c	(INTEQ.) (RI	IN.
TU SH CH TU SH BA BA BA SU BY GA	DINNECTIONS ZE AND ATING JEE NO. JEE TYPE JELL JEANNEL OR BONN JESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA PANSION JOINT -INLET NOZZLE SKETS-SHELL SIG -FLOATING OE REQUIREMEN JIGHT/SHELL NT EXT. CARBON  6  5	OUT INTERMEDIATE  OD IN.:  ET VARY VER  NGEMENT  DE NBR HEAD TS	2"-15 THK (MIN./AVG	O# FI.G  OD IN.  OD IN.  WCUT  UNDLE ENTRANC!  LLED WITH WATE: SPEC. TO SUIT DE  Spe Che	L: LENGTH  MATERIAL  SHELL COVER  CHANNEL CO'  TUBESHEET-F  IMPINGEMENT  (DIAM./AREA)  SEAL TYPE  U-BEND  TUBE-TUBESH  TYPE  TUBE SIDE  SPARE SET OF	FT.: PITCH 304 SS VER LOATING PROTECTION  BE GASKETS FOR TE BR	SPACING: CA	c	(INTEG.) (RI	IN.
TU SH CH TU SH BA BA BA SU BY GA	DINNECTIONS ZE AND ATING IBE NO. IBE TYPE IELL IANNEL OR BONN BESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG IPPORTS-TUBE PASS SEAL ARRA PANSION JOINT -INLET NOZZLE SKETS-SHELL SID -FLOATING DE REQUIREMEN IGHT/SHELL NT EXT. CARBON  6  5  4	OUT INTERMEDIATE  OD IN.:  ET VARY VER  NGEMENT  DE NBR HEAD TS	2"-15 THK (MIN./AVG	O# FT.G  OD IN.  OD IN.  CUT  **CUT  UNDLE ENTRANC!  SPEC. TO SUIT DE  Spe Che Prox	MATERIAL SHELL COVER CHANNEL COV TUBESHEET-F IMPINGEMENT (DIAM./AREA) SEAL TYPE U-BEND TUBE-TUBESH TYPE  TUBE SIDE SPARE SET OF SIGN TEMP., UNC. By cked By cass Approval	FT.: PITCH 304 SS VER LOATING PROTECTION  BE GASKETS FOR TE BR	SPACING: CA	c	(INTEG.) (RI	IN.
TU SH CH TU FLU BAA BAA SU BY GA	DINNECTIONS ZE AND ATING JEE NO. JEE TYPE JELL JEANNEL OR BONN JESHEET-STATION OATING HEAD CO FFLES-CROSS FFLES-LONG PPORTS-TUBE PASS SEAL ARRA PANSION JOINT -INLET NOZZLE SKETS-SHELL SIG -FLOATING OE REQUIREMEN JIGHT/SHELL NT EXT. CARBON  6  5	OUT INTERMEDIATE  OD IN.:  ET VARY VER  NGEMENT  DE NBR HEAD TS	2"-15 THK (MIN./AVG	O# FT.G  OD IN.  OD IN.  *CUT   L: LENGTH  MATERIAL  SHELL COVER  CHANNEL CO'  TUBESHEET-F  IMPINGEMENT  (DIAM./AREA)  SEAL TYPE  U-BEND  TUBE-TUBESH  TYPE  TUBE SIDE  SPARE SET OF	FT.: PITCH 304 SS VER LOATING PROTECTION  BE GASKETS FOR TE BR	SPACING: CA	c	(INTEG.) (RI	IN.	

Vendor

[_]	Process type MANUFACTURE OF POLYURETHANE FOAM CUSHIONS							
	Process Stream ID Code	Process Stream _Description	Physical State <sup>1</sup>	Stream Flow (kg/yr)				
	7X,7T,7S,7N	TDI	OL	600,000				
	7F,7G,7H,7L	POLYOL	OL	1,300,000				
	7H,7I,7J,7L	WATER	OL :	50,000				
	7EE	POLYURETHANE FOAM	SO	1,950,000				
*			-					
•		4-4-4		•				
	GC = Gas (cond GU = Gas (unco SO = Solid SY = Sludge or AL = Aqueous l OL = Organic l	liquid	e and pressure) ure and pressure)					

Process type MANUFACTURE  b.				
Process Stream ID Code	Known Compounds	Concen- trations <sup>2,3</sup> (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
7F	POLYOL	100%	N/A	N/A
. 7x	TDI	75%	N/A	N/A
	MDI	25%	N/A	N/A
7 <u>M</u>	POLYOL, TDI,	100%	N/A	N/A
	SILICONE, TIN, WATER, AMINE			<del></del> .
7EE	POLYURETHANE FOAM	100%	N/A	N/A
		-		
continued b	 elow			·
	Process Stream ID Code 7F 7X 7M	Process Stream ID Code  Known Compounds  7F POLYOL  7X TDI MDI  7M POLYOL, TDI, SILICONE, TIN, WATER, AMINE	Process Stream ID Code         Known Compounds¹         Concentrations²,³ (% or ppm)           7F         POLYOL         100%           7X         TDI         75%           MDI         25%           7M         POLYOL, TDI, 100%           SILICONE, TIN, WATER, AMINE         100%           7EE         POLYURETHANE FOAM         100%	Process Stream ID Code         Known Compounds¹         Concentrations², ³ (% or ppm)         Other Expected Compounds           7F         POLYOL         100%         N/A           7X         TDI         75%         N/A           MDI         25%         N/A           7M         POLYOL, TDI, SILICONE, TIN, WATER, AMINE         100%         N/A           7EE         POLYURETHANE FOAM         100%         N/A

7	.06	(continued	١١
,		( CONTAINAGE	. ,

<sup>1</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

1	NIAX A-1 BIS (2-DIMETHYL AMINO-ETHEL) ETHER	70%						
	ETHEL) ETHER	70%						
	DIPROPYLENE GLYCOL	30%						
22	DABCO DC 8154	100%						
	TRADE SECRET							
3								
	-							
4								
5	-							
e the following	codes to designate how the c	concentration was determined:						
= Analytical res	ılt							
Use the following codes to designate how the concentration was measured:								
= Volume = Weight		·						
	4  5  e the following of the following of the following of the Volume	the following codes to designate how the calculation  at the following codes to designate how the calculation  at the following codes to designate how the calculation  be the following codes to designate how the calculation  codes to designate how the calculation  codes to designate how the calculation						

SECTION 8	RESIDUAL	TREATMENT	GENERATION,	CHARACTERIZATION,	TRANSPORTATION.	AND
	MANAGEMEN			•	•	

#### General Instructions:

For questions 8.04-8.06, provide a separate response for each residual treatment block flow diagram provided in question 8.01, 8.02 or 8.03. Identify the process type from which the information is extracted.

For questions 8.05-8.33, the Stream Identification Codes are those process streams listed in either the Section 7 or Section 8 block flow diagrams which contain residuals for each applicable waste management method.

For questions 8.07-8.33, if residuals are combined before they are handled, list those Stream Identification Codes on the same line.

Questions 8.09-8.33 refer to the waste management activities involving the residuals identified in either the Section 7 or Section 8 block flow diagrams. Not all Stream Identification Codes used in the sample answers (e.g., for the incinerator questions) have corresponding process streams identified in the block flow diagram(s). These Stream Identification codes are for illustrative purposes only.

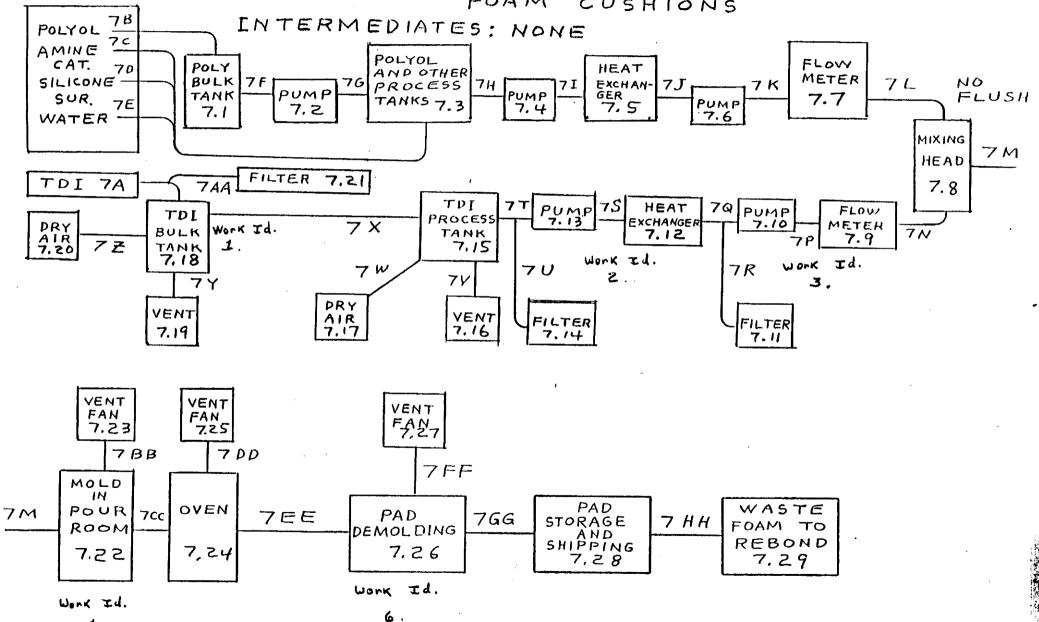
For questions 8.11-8.33, if you have provided the information requested on one of the EPA Office of Solid Waste surveys listed below within the three years prior to your reporting year, you may submit a copy or reasonable facsimile in lieu of answering those questions which the survey addresses. The applicable surveys are: (1) Hazardous Waste Treatment, Storage, Disposal, and Recycling Survey; (2) Hazardous Waste Generator Survey; or (3) Subtitle D Industrial Facility Mail Survey.

[_]	Mark	(X)	this	box	if	you	attach	a	continuation sheet.	•

## 7.01 PROCESSOR

4.

PROCESS TYPE: MANUFACTURE OF POLYURETHANE FOAM CUSHIONS



[_]		Ch	oustion namber nture (°C)	Temp	tion of erature nitor	Residence Time In Combustion Chamber (seconds)		
	Incinerator	Primary	Secondary	Primary	Secondary	Primary	Secondar	
	1	N/A	N/A	N/A	N/A	N/A	N/A	
	2							
	3							
	by circ	ling the app	of Solid Wast ropriate resp	onse.				
			• • • • • • • • • • • •					
	No	• • • • • • • • • • •	• • • • • • • • • • • • •	• • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • •		
[_]	(N/A) Incinerator  1		Air Po Control	llution Device		Types Emissior Avail	s Data	
	2		<del></del>		***************************************		1.00	
	by circl	ing the appr	of Solid Wasteropriate resp	onse. 	• • • • • • • • • • • • •	• • • • • • • • • • •	1	

#### WASTE DESCRIPTION CODES

These waste description codes were developed specifically for this survey to supplement the descriptions listed with the RCRA and other waste codes. (These waste description codes are not regulatory definitions.)

#### WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA F, K, P, OR U WASTE CODE

A01 3	Spent	solvent	(F001-F005.	K086)
~ .	2	TO LAGIN	(1.00)-1.003	~~~~

A02 Other organic liquid (F001-F005, K086)

"Exactly as described" means that the waste matches the description of the RCRA waste code.

INORGANIC LIQUIDS—Waste that is primarily inorganic and highly fluid (e.g., aqueous), with

low suspended inorganic solids and low organic

content
801 Aqueous waste with low solvents

802 Aqueous waste with low other toxic organics

**B03 Spent acid with metals** 

**B04** Spent acid without metals

805 Acidic aqueous waste

B06 Caustic solution with metals but no cyanides

B07 Caustic solution with metals and cyanides

B08 Caustic solution with cyanides but no metals

**B09 Spent caustic** 

B10 Caustic aqueous waste

B11 Aqueous weste with reactive sulfides

B12 Aqueous waste with other reactives (e.g., explosives)

B13 Other aqueous waste with high dissolved solids

514 Other aqueous waste with low dissolved solids

B15 Scrubber water

B16 Leacnate

817 Waste liquid mercury

B18 Other inorganic liquid (specify in "Facility Notes")

INORGANIC SLUDGES—Waste that is primarily inorganic, with moderate-to-high water content and low organic content; pumpable.

B19 Lime sludge without metals

820 Lime sludge with metals/metal hydroxide sludge

B21 Wastewater treatment sludge with toxic organics

822 Other wastewater treatment sludge

823 Untreated plating sludge without cyanides 824 Untreated plating sludge with cyanides

B25 Other sludge with cyanides

B26 Sludge with reactive sulfides

**B27** Sludge with other reactives

828 Degreasing sludge with metal scale or filings

829 Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)

B30 Sediment or lagoon dragout contaminated with organics

B31 Sediment or lagoon dragout contaminated with inorganics only

832 Drilling mud

B33 Asbestos siurry or sludge

B34 Chloride or other brine sludge B35 Other inorganic sludge (specify in

"Facility Notes")

INORGANIC SOLIDS—Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable.

B36 Soil contaminated with organics

B37 Soil contaminated with inorganics only

B38 Ash, siag, or other residue from incineration of wastes

B39 Other "dry" ash, siag, or thermal residue

B40 "Dry" lime or metal hydroxide solids chemically "fixed"

941 "Dry" time or metal hydroxide solids not "fixed"

B42 Metal scale, filings, or scrap

B43 Empty or crushed metal drums or containers

B44 Battenes or battery parts, casings, cores B45 Spent solid filters or adsorbents

B45 Spent solid filters or adsorbents B46 Asbestos solids and debris

847 Metal-cyanide salts/chemicals

848 Reactive cvanide salts/chemicals

B49 Reactive sulfide salts/chemicals

B50 Other reactive salts/chemicals

B51 Other metal salts/chemicals

852 Other waste inorganic chemicals 853 Lab pecks of old chemicals only

B54 Lab packs of debns only

B55 Mixed lab packs

856 Other inorganic solids (specify in "Facility Notes")

INORGANIC GASES—Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure.

B57 Inorganic gases

ORGANIC LIQUIDS—Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content.

B58 Concentrated solvent-water solution

B59 Halogenated (e.g., chlorinated) solvent

**B60** Nonhalogenated solvent

B61 Halogenated/nonhalogenated solvent mixture

B62 Oil-water emulsion or mixture

B63 Waste oil

B64 Concentrated aqueous solution of other organics

B65 Concentrated phenolics

B66 Organic paint, ink. lacquer, or varnish

867 Adhesives or expoxies

B68 Paint thinner or petroleum distillates

869 Reactive or polymerizable organic liquid
870 Other organic figured (specify in "Facility

Other organic figured (specify in "Facility Notes")

ORGANIC SLUDGES—Waste that is primarily organic, with low-to-moderate inorganic solids content and water content; pumpable.

871 Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids

B72 Still bottoms of nonhalogenated

solvents or other organic liquids

873 Oily sludge

874 Organic paint or ink sludge

B75 Reactive or polymerizable organics

876 Resins, tars, or tarry sludge

877 Biological treatment sludge

878 Sewage or other untreated biological sludge

B79 Other organic studge (specify in "Facility Notes")

ORGANIC SOLIDS—Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable.

580 Halogenated pesticide solid

861 Nonhalogenated pesticide solid

82 Solid resins or polymenzed organics

**B83** Spent carbon

884 Reactive organic solid

885 Empty fiber or plastic containers

886 Lab packs of old chemicals only

867 Lab pecks of debris only

888 Mixed lab packs

889 Other halogenated organic solid

890 Other nonhalogenated organic solid

ORGANIC GASES—Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure.

891 Organic gases

A03 Still bottom (F001-F005, K086)

A04 Other organic studge (F001-F005, K086)

A05 Wastewater or aqueous mixture

A06 Contaminated soil or cleanup residue

A07 Other F or K waste, exactly as described A08 Concentrated off-spec or discarded product

A09 Empty containers

A10 Incinerator ash

A11 Solidified treatment residue

A12 Other treatment residue (specify in "Facility Notes")

A13 Other untreated waste (specify in "Facility Notes")

•	a.	b.	<u>Manufa</u>	cturing of p		ne roam cu	f.	g.
	tream ID Code	Waste Description Code	Management Method Code <sup>2</sup>	Residual Quantities (kg/yr)	of Resi	gement dual (%) Off-Site	Costs for Off-Site Management (per kg)	Changes in Management Methods
_	8A	B70	M6	1843	NA	100	\$0.89	NA
•		Aromatic Isocyanates	5S					
			1D					
	8A	B70	M6	1843	NA NA	100		NA
		Aromatic Isocyanates	5S					
			<u>1D</u>					•
			•					
 <sup>1</sup> ບ <sup>2</sup> ບ	se the	codes provi	ded in Exhil ded in Exhil	bit 8-1 to de	esignate (	the waste (	descriptions	

)5	(continued)							
	<sup>5</sup> Use the following codes to designate how the concentration was measured:							
	V = Volume W = Weight							
	<sup>6</sup> Specify below.	the analytical test methods used and their detection limits Assign a code to each test method used and list those codes	s in the table s in column e.					
	<u>Code</u>	Not stated on	Detection L (± ug/l) Probably					
	1	Poly urethanes certificate of analysis	= 1%					
	2							
	3							
	4							
	5							
	6		•					
			,					
-								
•								

Ω.	05	(continued)
ο.	<b>U J</b>	/ continued)

8.05

ľΣſ

<sup>3</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column of (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1		
N/A	N/A	N/A
2		
3		
4		
5		
<sup>4</sup> Use the following codes to	o designate how the concentration	on vas determined:
A = Analytical result E = Engineering judgement		
continued below		
Mark (X) this box if you at	tach a continuation sheet.	

B.UD (continued	8	.05	(con	tinued)	)
-----------------	---	-----	------	---------	---

<sup>3</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	•	Components of Additive Package		Concentrations (% or ppm)
1	_			
N/A		N/A		N/A
2	. <b>.</b>			
		***		1
. <b>3</b>				
3				
<u>4</u>				
5				
<sup>4</sup> Use the followi	ng codes to d	esignate how the concer	tration va	s determined:
A = Analytical E = Engineering	result			
continued below				
Mark (X) this bo	x if you atta	ch a continuation sheet	•	
		56		

### 8.05 (continued) 1 Use the following codes to designate the type of hazardous waste: I = Ignitable C = Corrosive R = Reactive E = EP toxicT = ToxicH = Acutely hazardous <sup>2</sup>Use the following codes to designate the physical state of the residual: GC = Gas (condensible at ambient temperature and pressure) GU = Gas (uncondensible at ambient temperature and pressure) S0 = SolidSY = Sludge or slurry AL = Aqueous liquid OL = Organic liquid IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene) 8.05 continued below

Mark (X) t	his box if	you attach	a continuation sheet.	

#### PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

	a.	<b>b</b> .	c.	d.	e.	f.	g.
	Stream ID Code	Type of Hazardous Waste	Physical State of Residual <sup>2</sup>	Known Compounds <sup>3</sup>	Concentra- tions (% or ppm) <sup>4,5,6</sup>	Other Expected Compounds	Estimated Concen- trations (% or ppm)
	8A	<u>T</u>	OL	TDI	75% (E) (W)	None	N/A
		R I C	Flash point 270°.	MDI	<u>25% (W) (E) (</u> 1	)*	
7	8B	E	OL OL	TOI	75 (E) (W)	None	N/A
s		P C	Flash point 270° T.O.C.	MDI	25 (E) (W)		•
	T.O.C.	(Tag open cu	p)				
	-						

#### 8.05 continued below

 $[\overline{xx}]$  Hark (X) this box if you attach a continuation sheet.

3.05 CBI	process	type, photo	residual treat ocopy this que	ment block feation and co	in your residu low diagram is mplete it sepa r explanation	provided for ear	r more than one
	Process	b.	<u>Manufac</u>	ture of Polyu	rethane Foam (		
	Stream ID Code	Type of Hazardous Waste	Physical State of Residual <sup>2</sup>	Known Compounds <sup>3</sup>	Concentra- tions (% or ppm) <sup>4,5,6</sup>	f. Other Expected Compounds	Estimated Concen- trations (% or ppm)
	8A	<u> </u>	OL	TDI	75% (E) (W)	None	N/A
		R I C	Flash point 270° T.O.C.	MDI	25% (W) (E) (1	) <u>*</u>	
<b>3</b>	8B	E	OL	TDI	75 (E) (W)	None	
£		R C	Flash point 270° T.O.C.	MDI	25 (E) (W)		
	T.O.C.	(Tag open cu	<b>p</b> )			****	
							015 DOCUMENT R
•	,						RECEIPT OF C.
	٠						

[\_\_] Mark (X) this box if you attach a continuation sheet.

3	Process type .	••••			
	Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Compositio
	7.18	Horizontal	16 - 21	40.72	steel
		10,000 gal.			
		tank			-
	7.15	Vertical	16 - 32	30.5	<u>steel</u>
		<u>120 gal.</u>			"pheno
		running tank			lining'
	7.12	heat-	<u> 16 - 38</u>	254.50	stainle
		exchange			steel
	7.8	high pressure	<u> 16 - 38</u>	4.072	<u>Hydrau</u>
		dispensing		<del></del>	Injecto
	Commence of the control of the contr	<u>dispensing</u> head			Injecto

7.03	which, if combined, wou treated before emission from one process type, for question 7.01. If	instructions, provide a process block flow diagram showing al ms and emission points that contain the listed substance and ald total at least 90 percent of all facility emissions if not a into the environment. If all such emissions are released provide a process block flow diagram using the instructions all such emissions are released from more than one process block flow diagram showing each process type as a separate
[_]	Process type	MANUFACTURE OF POLYURETHANE FOAM CUSHIONS
		SEE ATTACHED BLOCK FLOW DIAGRAM
,		
**		
	Mark (X) this how if you	attach a continuation cheet
[_]	Mark (X) this box if you	attach a continuation sheet.

#### PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

8A

Process type ..... Manufacture of Polyurethane Foam Cushions

TDI From
Calibration
of
mixing
head

55-Gal
Waste
Drum

8 B hauled away
By Norwalk Drum

[ ] Mark (X) this box if you attach a continuation sheet.

8.02	which describe each of	instructions, provide residual treatment block flow diagrament the treatment processes used for residuals identified in
CBI	question 7.02.	
[_]	Process type	N/A
		·
_ <sub>1</sub>	Mark (X) this hav if was	a attach a continuation sheet.
	(m) this box if you	attach a continuation sheet.

9.05	Describe the various work area(s) shown in question 9.04 that encompass workers who
	may potentially come in contact with or be exposed to the listed substance. Add any
	additional areas not shown in the process block flow diagram in question 7.01 or
<b></b>	7.02. Photocopy this question and complete it separately for each process type.

<u>CBI</u>

	Process	type	•••••	Manufacture	of	polyurethane	foam	cushion
--	---------	------	-------	-------------	----	--------------	------	---------

Work Area ID	Description of Work Areas and Worker Activities
-1	Bulk-storage: unload rail & tanker cars.
2	Compound platform: monitor temperatures & pressures
3	High-pressure pump area: calibration & filter checks.
4	Pour room: calibration & head maintenance.
5	Lab area: follow through on hand mixes.
6	Strip station: area in which cushions are removed from molds.
7	Unloading zone: area in chich molds are interchanged.
8	
<b>9</b>	
10	

9.05 CBI	may potentially additional areas	rious work area(s) shown in question 9.04 that encompass workers who come in contact with or be exposed to the listed substance. Add any not shown in the process block flow diagram in question 7.01 or this question and complete it separately for each process type.
[∑ſ	Process type	Manufacture of polyurethane foam cushion
	Work Area ID	Description of Work Areas and Worker Activities
	1	Bulk-storage: unload rail & tanker cars.
	2	Compound platform: monitor temperatures & pressures.
	3	High-pressure pump area: calibration & filter checks.
	4	Pour room: calibration & head maintenance.
	5	Lab area: follow through on hand mixes.
	6	Strip station: area in which cushions are removed from molds.
	7	Unloading zone: area in chich molds are interchanged.
	8	
	9	

[ Mark (X) this box if you attach a continuation sheet.

9.04	In accordance with the indicate associated wo	instructions, provide your process block flow diagram(s) and ork areas.
CBI		
[_]	Process type	MANUFACURE OF POLYURETHANE FOAM CUSHIONS
		SEE ATTACHED BLOCK FLOW DIAGRAM
i		
¥		
æ.		
	Mark (X) this box if yo	u attach a continuation sheet.

9.03 CBI	Provide a descriptivencompasses workers listed substance.	ve job title for each labor category at your facility that who may potentially come in contact with or be exposed to the
	Labor Category	Descriptive Job Title
	A	COMPOUNDER: Chemical batch formulator
	В	Production Line: Mechanic
	С	Production Line: Tool-Mechanic
	D	Production Line: Electrician
	E E	
	F	
	G	
	H	
	I	
	J	

		<del></del>			
9.02 <u>CBI</u>	In accordance with the in which you engage.	e instructions, complete	the following ta	able for ea	ach activity
[_]	а.	b.	c.	d.	e.
	Activity	Process Category	Yearly Quantity (kg)	Total Vorkers	Total Worker-Hours
	Manufacture of the	Enclosed	N/A	N/A	N/A
Act Man lis On- rea On- non:	listed substance	Controlled Release	N/A	N/A	N/A
		0pen	N/A	N/A	N/A
	On-site use as	Enclosed	N/A	N/A	N/A
On-signonrea	reactant	Controlled Release	595,680	90	126,720
		0pen	25	1	1,760
	On-site use as	Enclosed	1	1	1,760
On-si	inonreactant	Controlled Release	N/A	N/A	N/A
,	•	0pen	N/A	N/A	N/A
	On-site preparation of products	Enclosed	N/A	N/A	N/A
	or products	Controlled Release	N/A	N/A	N/A
		Open	37 / 4	27 / 4	37 / A

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

## ALLEN INDUSTRIES, INC.

### **EMPLOYEE SEPARATION**

		DATE	
EMPLOYEE'S NAME			
JOB CLASSIFICATION	SHIFT	RATE	
DEPARTMENT	DATE EFFECTIVE	TIME	A.M P.M
IT AFTER GIVING NOTICE	QUITE, OTHER REASONS	DISCHARGE	
EXPLAIN IN FULL, REASON FOR ABOVE SEPARATION		44.44.54.44.44.55	
I AGREE THAT THE FOREGOING IS THE REASON FOR THIS SEPARATION	EMPLOYEE'S Signature		
DATE HIRED			
LAST DAY WORKED			
TOOLS CLEARED			
BADGE CLEARED	F	PERSONNEL DEPARTMENT	

	CONFIDENTIAL WAGE / SALARY HISTORY									
DATES			WORK	RATE	O	F PAY				
FROM	ТО	POSITION AND CLASSIFICATION	LOCATION	AMOUN	TV	PER	REASON FOR CHANGE			
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### OTHER INFORMATION

SUBJECT	COMMENTS (DATE & SIGNATURE REQUIRED)	in the second
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<del></del>		

# **CONFIDENTIAL EMPLOYEE HISTORY**

Sex Exemptions Plaimed  Idditional mount  Withheld  Eligible	Social Securi	Date	9 20 21		Mar	Insur Life Medica Deper Maj. Me	Self adent(s)	Name of S	pouse	Date Joi		Date Gra	dren
Sex Exemptions Plaimed  Additional mount  Withheld  Eligible	Date Joined	Date	be With	drawi		Life Medica Deper Maj. Me	I-Self indent(s) edSelf			Date Jo			
Exemptions Plaimed  Additional mount vithheld  Eligible	Date Joined	Date	te With	drawi		Life Medica Deper Maj. Me	I-Self indent(s) edSelf			Date Joi			
dditional mount Vithheld e Eligible			te With	drawi		Life Medica Deper Maj. Me	l-Self ident(s) edSelf	Date Eli	gible	Date Jo	ined	Date With	hdrawn
mount vithheld			te With	drawi	0	Life Medica Deper Maj. Me	l-Self ident(s) edSelf	Date Eli	gible	Date Jo	ined	Date With	adrawio
			te With	drawi		Life Medica Deper Maj. Me	l-Self ident(s) edSelf	Date Eli	gible	Date Joi	ined	Date With	xdrawn
NFORM	MATION	I				Medical Deper Maj. Me	ndent(s) edSelf						
NFORM	MATION	I				Deper Maj. Me	ndent(s) edSelf						
NFORM	MATION	I				Maj. M	edSelf						
NFORM	MATION	I											
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DEACON													
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# TO BE FILLED OUT ONLY BY THE PERSONNEL DEPARTMENT AFTER APPLICANT IS HIRED

. Date				st-Employr	nent Informatio	on I	Hire Date		
	help us comp answer the c			employment o	pportunity recordk	eeping, recording	and other legal red	quirement	
Birth D	ate	DAY	YEAR	Sex 🗆 Male	☐ Female				
Race	☐ White	☐ Black	☐ Asian/Pac	ific Islands	☐ American Indi	an/Alaskan Native	☐ Hispanic	☐ Othe	
Are you	u a veteran?	☐ Wo	id War ii	☐ Korea	☐ Vietnam	Other			
Are you	a disabled v	veteran?	☐ Yes	□ No	If yes, what i	s your VA disabilit	y rating?	0	
Are you	ı handicappe	d?	☐ Yes ☐ !	No	If yes, please de	scribe handicap_			
If you a	are covered b	y group insu	rance through	your spouse's	employer, please	complete the following	owing:		
Spouse	's Name:		S	S#		Group Contract#			
Employ	er's Name _								
Employ	er's Address							-	
	VIEWED BY					DATE			
HIRED		FOR DEPT.		POSITION	WILL RE	PORT	SALARY WAGES		
PRC	OVED: 1.		,	2.		3.			
		EMPLOYMENT !	MANAGER		DEPT. HEAD	OPERATIO	NS AND/OR GENERAL MA	NAGER	

of Supervisor	Your Job Title & Nature of Work Performed	Kind of Business
me		
Title		
Phone No.		
Name		
Title		
Phone No.		
Name		
Title		
Phone No		
ive personal references (not relatives or former	employers) with whom you have had considerable contact (for refe	Prence purposes)
		TO OPTIONS
	AD CAREFULLY BEFORE SIGNING	
ompany's Statement:		
ompany's Statement: his company is an AFFIRMATIVE ACT excluding any applicant's consideration sability, mental disability, age if from 4	TION EMPLOYER. No question on this application is an for employment because of his or her race, color, religion to 70 or his or her being a veteran of the Vietnam	ion, sex, national origin, physica era.
ompany's Statement: his company is an AFFIRMATIVE ACT excluding any applicant's consideration sability, mental disability, age if from 4	TION EMPLOYER. No question on this application is an for employment because of his or her race, color, religion to 70 or his or her being a veteran of the Vietnam	ion, sex, national origin, physica era.
ompany's Statement:  his company is an AFFIRMATIVE ACT excluding any applicant's consideration sability, mental disability, age if from 4 his application for employment is not vi	TION EMPLOYER. No question on this application is a	юп, sex, national origiп, physica era.
ompany's Statement: his company is an AFFIRMATIVE ACT excluding any applicant's consideration sability, mental disability, age if from 4 his application for employment is not very policant's Statement: columnarily give the Company the right to his, and release from all liability or respondance a medical evaluation at the Company have a medical evaluation at the Company	TION EMPLOYER. No question on this application is an for employment because of his or her race, color, religion to 70 or his or her being a veteran of the Vietnam alid unless it has been signed and dated by the application investigate my past employment and activities, agree ensibility all persons, companies, or corporations supply any's expense and understand that the medical evaluations.	ion, sex, national origin, physica era. cant. to cooperate in such investiga
ompany's Statement:  his company is an AFFIRMATIVE ACT excluding any applicant's consideration sability, mental disability, age if from 4 his application for employment is not visually statement:  coluntarily give the Company the right to his, and release from all liability or respondance a medical evaluation at the Company's Affirmative Action commits	TION EMPLOYER. No question on this application is an for employment because of his or her race, color, religion to 70 or his or her being a veteran of the Vietnam alid unless it has been signed and dated by the application of investigate my past employment and activities, agree ensibility all persons, companies, or corporations supply any's expense and understand that the medical evaluation are to the handicapped.	ion, sex, national origin, physica era.  cant.  to cooperate in such investigating such information. I am willing tion procedure is consistent with
ompany's Statement: his company is an AFFIRMATIVE ACT excluding any applicant's consideration sability, mental disability, age if from 4 his application for employment is not very coluntarily give the Company the right to have a medical evaluation at the Company a Company's Affirmative Action commit moderstand that any false answers or of the estigation will be cause for my termina	CION EMPLOYER. No question on this application is an for employment because of his or her race, color, religion to 70 or his or her being a veteran of the Vietnam alid unless it has been signed and dated by the application investigate my past employment and activities, agreemsibility all persons, companies, or corporations supplying any's expense and understand that the medical evaluation it ments to the handicapped.  The property of the persons are not the property of the persons and the persons application, or in connection.	ion, sex, national origin, physical era.  cant.  to cooperate in such investigating such information. I am willing tion procedure is consistent with ction with the above-referenced
ompany's Statement: his company is an AFFIRMATIVE ACT excluding any applicant's consideration sability, mental disability, age if from 4 his application for employment is not very coluntarily give the Company the right to have a medical evaluation at the Company a Company's Affirmative Action commit nderstand that any false answers or of estigation will be cause for my terminal	CION EMPLOYER. No question on this application is an for employment because of his or her race, color, religion to 70 or his or her being a veteran of the Vietnam alid unless it has been signed and dated by the application investigate my past employment and activities, agreemsibility all persons, companies, or corporations supplying any's expense and understand that the medical evaluation it ments to the handicapped.  The property of the persons are not the property of the persons and the persons application, or in connection.	ion, sex, national origin, physical era.  cant.  to cooperate in such investigating such information. I am willing tion procedure is consistent with ction with the above-referenced

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	Emp	loyed	Rate of Pay	
Begin with present or most recent employer (including military service) and work back.	From Month Yr	To Month Yr.	End or Present	Your Reason for Leaving
Cmplayer				
.dress				
City, State, Zip				
Employer				
Address				
City, State, Zip				
Employer				
Address				
City, State, Zip	j			
			<u></u>	
If your work record with a former employer was under another i	name, please g	ive that comple	te name so that we	may verify your work record
May we contact your former employers? ☐ Yes ☐ No				
PHYSICAL RECORD: RESPIRATORY PROBLEMS, AST	THMA OR ALL	EBCIES EX		
Do you have any physical defects that should be considered in	VOUS Desforming	EHGIES U	Yes □ No □ Yes □ No	
Describe	you portorming	a mil work!	C 193 C NO	
Uan and single harman				
How much time have you lost from work or school during the pa	ast year becaus	e of illness or i	njury?	days
Please explain				
Mile view mineral words in the				
At And Grant 171 AMT TRRE BITL IN ATOM DESCRIPTION OF	elated intury?	🗆 Yes 🖵 No		
.ve you missed work in the past two (2) years due to a work re	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Please explain				
Please explain In Case of				
Please explain	Name		Address	2hone No.
Please explain In Case of			Address	Phone No.
Please explain In Case of			Address	Phone No.
Please explain In Case of			Address	Phone No.
Please explain In Case of			Address	Phone No.
Please explain In Case of Emergency Notify	Name SPECIAL A		Address	
Please explain In Case of Emergency Notify  . Clude any organization the name or character of which	Name SPECIAL A		Address  Address	
Please explain In Case of Emergency Notify  .  clude any organization the name or character of which mental condition of its members.)	Name SPECIAL A	race, religio		
Please explain In Case of Emergency Notify  . Clude any organization the name or character of which	Name SPECIAL A	race, religio		
Please explain In Case of Emergency Notify  .  clude any organization the name or character of which mental condition of its members.)	SPECIAL An may reveal	race, religio		
Please explain In Case of Emergency Notify  .  clude any organization the name or character of which mental condition of its members.)	SPECIAL An may reveal	race, religio		
Please explain In Case of Emergency Notify  .  clude any organization the name or character of which mental condition of its members.)  in School:  lege:	SPECIAL A	race, religio		national origin, ancestry, or the physica
Please explain In Case of Emergency Notify  .  clude any organization the name or character of which mental condition of its members.)  in School:  lege:	SPECIAL A	race, religio		national origin, ancestry, or the physica
Please explain In Case of Emergency Notify  .  clude any organization the name or character of which mental condition of its members.)	SPECIAL An may reveal	race, religio		national origin, ancestry, or the physica

#### PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

Data Element	Data are Ma Hourly Workers	intained for: Salaried Workers	Year in Which Data Collection Began	Number of Years Records Are Maintained
Date of hire	<u> </u>	<u> </u>	1955	Infinite
Age at hire	<u> </u>	X	1955	Infinite
Work history of individual before employment at your facility	<u> x</u>	x	1955	Infinite
Sex	<u> </u>	<u> </u>	1955	Infinite
Race	X	X	1955	Infinite
Job titles	<u>X</u>	<u> </u>	1955	Infinite
Start date for each job title	<u> </u>	x	1955	Infinite
End date for each job title	X	Х	1955	Infinite
Work area industrial hygiene monitoring data	<u> </u>	<u> </u>	1955	Infinite
Personal employee monitoring data .	<u> </u>	<u> </u>	1955	Infinite
Employee medical history	X	<u> </u>	1955	Infinite
Employee smoking history	N/A	N/A	N/A	N/A
Accident history	X	<u> </u>	1955	Infinite
Retirement date	<u> </u>	<u> </u>	1955	Infinite
Termination date	<u> </u>	<u> </u>	1955	Infinite
Vital status of retirees	<u> </u>	x	1955	Infinite
Cause of death data	X	X	1955	Infinite .

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.



### **Woodbridge Group of Companies**

We are an equal opportunity employer dedicated to a policy of non-discrimination in employment on any basis including race, creed, color, age, sex, religion or national origin.

### APPLICATION FOR EMPLOYMENT

PERSONAL INFORM	MATION	Date	So	cial Security Number		
Name						
· · · · · · · · · · · · · · · · · · ·	Lad		First		Middle	
Present Address		Street	City		State	Zio
Phone No.		Referred By				
Are you a U.S. Citizen	? 🗆 Yes 🗆 N	lo If no, do you have a	work permit?	☐ Yes ☐	No Permit No.	
Have you ever been co	onvicted of a law	violation?	o If yes, lis	t convictions a	and dates:	
EMPLOYMENT DES	IRED	and the second of the second o				
Position			Date You Can Start		Wage/Sal Desired	ary
Are You Employed Now?			if So May We in of your Present I			
Ever Applied to this Compa	iny Before?		Where		When	
		prporation at any of its loc				•
☐ Yes When?			Locatio	n		
		fication attained?				
State name and department already employed by this co		·				
Will you be able to work the	e following times if n	eeded? 2nd or 3rd Shift (	⊒ Yes □ No P	lotating Shift [	Yes □ No	
	Overtime	yes □ No Saturda	Yes 🗆 No	Sundays 🗆	Yes 🗆 No	
EDUCATION	Nan	ne and Location of School		Circle Last Year Completed	Oid You Graduate?	Subjects Studied and Degree(s) Received
					☐ Yes	
Grammar School					□ No	
					□ Yes	
High School				1 2 3 4	□ No	
College				1 2 3 4	□ Yes	
College				1234	□ No	
Trade, Business or		<u> </u>		1 2 3 4	☐ Yes	
Carrespondence School					□ No	
	· · · · · · · · · · · · · · · · · · ·		···			
Subjects of Special Study or	r Research Work					
List other training and skills	including technical.	trade, and military (include	machines you can	operate)		
typing wpm	shorthand/spe	edwriting wpm				

9.06 CBI	each labor come in con	category at yo tact with or b	ble for each work are ur facility that enco e exposed to the list y for each process ty	mpasses worke: ed substance.	rs who may pot Photocopy th	tentially				
	Process type Manufacture of polyurethane foam cushions.									
	Work area	• • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	<u>High</u>	pressure pum	o area				
	Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance <sup>1</sup>	Average Length of Exposure Per Day <sup>2</sup>	Number of Days per Year Exposed				
	A	1	Skin, eyes, resp.	0.L.	B	110				
	B	6	Skin, eyes, resp.	<u>O.L.</u>	D	220				
	C	4	Skin, eyes, resp.	O.L.	A	5				
	D	1	Skin, eyes, resp.	0.L.	D	180				
						4/10/14/14/14/14/14				
						•				
			-							
			7							
	<sup>1</sup> Use the fol the point o	lowing codes to f exposure:	o designate the physi	cal state of	the listed sul	ostance at				
	-	condensible at		Sludge or sl	urry					
	GU = Gas (	rature and presuncondensible a	at ambient $OL =$	Aqueous liqui Organic liqui	id					
	includes SO = Solid	eature and presides fumes, vapo	ssure; IL = ors, etc.)	Immiscible 1: (specify phase 90% water, 10	ses, e.g.,					
;	Use the foll	lowing codes to	designate average l	ength of expos	sure per day:	•				
		es or less than 15 minute g 1 hour	s, but not	Greater than 2 exceeding 4 ho	ours					
	C = Greater	than one hour, g 2 hours	but not	Greater than 4 exceeding 8 ho Greater than 8	ours	ot				

٦.	and complete it separately for each process type and work area.  Process type Manufacture of polyurethane foam cushions.									
<sup>1</sup>	Work area Pour room.									
	Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)		Physical State of Listed Substance	Average Length of Exposure Per Day <sup>2</sup>	Number Days pe Year Expose			
	A	1	Skin, eyes, res	īp.	<u> 0.L.</u>	В	20			
	<u>B</u>	6	Skin, eyes, res	<u>. 0</u>	<u>O.L.</u>	E	220			
	C	4	Skin, eyes, res	p.	O.L.	В	180_			
	D	1	Skin, eyes, res	p.	O.L.	E	200			
		<u> </u>								
				<del>_</del>	•					
				-						
		-		-	<del></del>					
				_						
				_						
	Use the following the point of	lowing codes t f exposure:	o designate the ph	ysic	al state of	the listed sub	stance a			
	GC = Gas (	condensible at	ambient S	Y =	Sludge or slu	ırry				
		rature and pre- incondensible	ssure) A	L =	Aqueous liqui Organic liqui	.d				
	temper	cature and pre	ssure; I	L =	Immiscible li	.quid				
	SO = Solid	les fumes, vap	ors, etc.)		(specify phas 90% water, 10					
•	Use the foll	lowing codes to	designate averag		•	•				
	A = 15 minut		D	= G:	reater than 2	hours, but n	ot			
		than 15 minute g 1 hour	s, but not	e:	xceeding 4 ho	urs				
	C = Greater	than one hour,	but not	e	xceeding 8 ho		στ			
		than one hour, g 2 hours	but not	e		urs				

٠,	and complete it separately for each process type and work area.									
Ţ	Process type Manufacture of polyurethane foam cushions.  Work area Lab area.									
	Work area	• • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	<u>I</u>	ab area.					
	Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physic State Liste Substar	of Length of Exposure	Number Days p Year Expos				
	A		Skin, eyes, res	o. <u>O.L.</u>	D	180				
	<u>B</u>	6	Skin, eyes, res	0.L.	B	20				
		4	Skin, eyes, res	0.L.	A					
	D	1	Skin, eyes, res	o	В	20				
		•				_				
						-				
		<del></del>		•		-				
	GC = Gas (of temper included SO = Solid  2 Use the foll  A = 15 minut	condensible at cature and pre- uncondensible a cature and pre- les fumes, vapo	ssure) AI at ambient OI ssure; II ors, etc.) o designate average	= Sludge = Aqueous = Organic = Immisci (specifi 90% wate length of	or slurry liquid liquid ole liquid phases, e.g., er, 10% toluene) exposure per day:					
	exceedin	g 1 hour	E		han 4 hours, but	not				
		than one hour, g 2 hours		exceeding	; 8 hours than 8 hours					

Process type Manufacture of polyurethane foam cushions.									
Work area	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	Strip	station.					
Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance	Average Length of Exposure Per Day	Number Days pe Year Expose				
A	1.	Skin, eyes, resp.	O.L.	A	110				
B	6	Skin, eyes, resp.	O.L.	D	220				
C	4	Skin, eyes, resp.	O.L.	E	220				
<u>D</u>	1	Skin, eyes, resp.	O.L.	С	220				
					<del></del>				
			-						
****	**************************************								
					<del></del>				
GC = Gas temp GU = Gas temp incl SO = Soli  2 Use the fo A = 15 min B = Greate exceed	(condensible at erature and presource and presource and presource and presources, vapod	ssure)  AL =  at ambient  OL =  ssure;  IL =  ors, etc.)  designate average less, but not  E = 0	Sludge or slu Aqueous liqui Organic liqui Immiscible li (specify phas 90% water, 10	irry d d quid es, e.g., % toluene) ure per day: hours, but n urs hours, but n	ot				

- <sub>1</sub>	and complete it separately for each process type and work area.  Process type Manufacture of polyurethane foam cushions.										
			• • • • • • • • • • • • • • • • • • • •		oading zone						
	Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance <sup>1</sup>	Average Length of Exposure Per Day <sup>2</sup>	Number ( Days per Year Exposed					
	A	1:	Skin, eyes, res	p. 0.L.	A	5_					
	<u>B</u>	6	Skin, eyes, res	p. 0.L.	D	220					
	C	4	Skin, eyes, res	o. <u>O.L.</u>	E	220					
	D	1	Skin, eyes, res	p. 0.L.	D	220					
				_							
				_							
						<del></del>					
		- <del>1000-3-100</del>	-								
					· · · · · · · · · · · · · · · · · · ·	-					
		-									
	Use the following the point of	lowing codes t f exposure:	o designate the ph	ysical state of	the listed sul	bstance at					
	GC = Gas (	condensible at	ambient S	Y = Sludge or s	lurry						
		rature and presuncondensible s	ssure) A	L = Aqueous liq	uid						
		rature and pres	<del>_</del>	= Organic lique = Immiscible							
	includ	les fumes, vap		(specify pha	ases, e.g.,						
	_			90% water,	ŕ						
	Use the foll	lowing codes to	designate average	e length of expo	osure per day:						
	A = 15 minut		D	= Greater than		ot					
		than 15 minute g 1 hour		exceeding 4 h = Greater than		not					
	C = Greater	than one hour,	but not	exceeding 8 h	nours						
	OVECOUSE	g 2 hours	<u>ਜ</u>	= Greater than	Q ha						

	and complete	e it separater	y for each pro-	cess typ	pe and work a	rea.				
_1	Process type Manufacture of polyurethane foam cushions.									
	Work area	Work area			Bulk storage.					
	Labor Category	Number of Workers Exposed	Mode of Exposi (e.g., din skin conta	ect	Physical State of Listed Substance	Average Length of Exposure Per Day <sup>2</sup>	Number ( Days per Year Exposed			
	A	<u> </u>	Skin, eyes,	resp.	O.L.	D	220			
	В	6	Skin, eyes,	resp.	0.L.	C	40			
		4	Skin, eyes,	resp.	O.L.	A	5			
	D	1	Skin, eyes,	resp.	O.L.	B	20			
		•								
				· · · · · · · · · · · · · · · · · · ·	-					
			***							
				<del></del>						
	Use the following the point of	lowing codes t f exposure:	o designate th	e physic	cal state of	the listed sub	ostance a			
		condensible at			Sludge or slu					
	GU = Gas (1	rature and presonation	at ambient	OL =	Aqueous liqui Organic liqui	ld				
		rature and pres les fumes, vapo		IL =	Immiscible li (specify phase					
	SO = Solid				90% water, 10					
:	Use the foll	owing codes to	o designate ave	erage le	ength of expos	ure per day:				
	A = 15 minut B = Greater	es or less than 15 minute	es, but not		Freater than 2 exceeding 4 ho		ot			
		g 1 hour than one hour,	but not		reater than 4 exceeding 8 ho		ot			
		g 2 hours			reater than 8					

			ufacture of poly				
	Labor Category	Number of Workers Exposed	Mode of Exposu (e.g., dir skin conta	re ect	Physical State of Listed Substance	Average Length of Exposure Per Day	Number of Days per Year Exposed
	A	1	Skin, eye, re	sp.	O.L.	С	110
	B	6	Skin, eye, re	sp.	O.L.	D	220
	C	4	Skin, eye, re	sp.	O.L.	A	5
	D	1	Skin, eye, re	sp.	O.L.	D	180
•							
							•
					***************************************		
			···				
	GC = Gas (contemporary GU = Gas (contemporary Ga	condensible a rature and prouncondensible rature and pro des fumes, va	essure) at ambient essure; pors, etc.)	SY = AL = OL = IL =	Sludge or sl Aqueous liqu Organic liqu Immiscible l (specify pha 90% water, 1	urry id id iquid ses, e.g., 0% toluene)	bstance at
1	A = 15 minus B = Greater exceedir C = Greater			D = (	Greater than Sexceeding 4 he	2 hours, but nours 4 hours, but nours	

9.07 CBI	Weighted Average (1	egory represented in question 9.06 IVA) exposure levels and the 15-minstion and complete it separately for	nute peak exposure levels.						
<u></u>	Process type Manufacture of polyurethane foam cushions.								
''	Work area								
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m³, other-specify)	15-Minute Peak Exposure Level (ppm, mg/m³, other-specify)						
	A	NA NA	N/A						
	B	NA	NA						
	C	NA	NA						
	D	NA	NA_						
		-							
		-							
		<del></del>							
	Name (V) this has i	f you attach a continuation sheet							

9.07 CBI	For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.					
	Process type MANUFACTURE OF POLYURETHANE FORM CUSHIONS  Work area					
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)	15-Minute Peak Exposure Leve (ppm, mg/m³, other-specify)			
	A	O PPB	1 PPB			
	В	О РРВ	1 PPB			
,	с	O PPB	1 PPB			
	D	O PPB	1 PPB			
	<del></del>					
			-			
	TT .					

[\_] Mark (X) this box if you attach a continuation sheet.

9.07 CBI	Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels Photocopy this question and complete it separately for each process type and area.					
	Process type	••••	MANUFACTURE OF PLOYURETHANE	FOAM CUSHIONS		
	Work area	•••••	<u>3.</u>	HIGH PRESSURE PUMP AREA		
	Labor Category		8-hour TWA Exposure Level (ppm, mg/m³, other-specify)	15-Minute Peak Exposure Level (ppm, mg/m³, other-specify)		
	A		O PPB	l PPB		
	В	;•	O PPB	l PPB		
	c		O PPB	1 PPB		
	D		O PPB	1 PPB		
			-			

[\_] Mark (X) this box if you attach a continuation sheet.

_] _]	Process type	MANUFACTURE OF POLYURETHANE	FORM CUSHIONS
	Work area	4.	POUR - ROOM
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m³, other-specify)	15-Minute Peak Exposure Le (ppm, mg/m³, other-specif
	A	O PPB	1 PPB
	в	О РРВ	1 PPB
	c	О РРВ	1 PPB
	<u> </u>	О РРВ	1 PPB

[\_\_\_] Mark (X) this box if you attach a continuation sheet.

CBI		MANUFACTURE OF POLYURETHANE	FOAM CUCUTONS
[_]	Process type Work area		ABORATORY
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m³, other-specify)	15-Minute Peak Exposure Leve (ppm, mg/m <sup>3</sup> , other-specify)
	<u>A</u>	O PPB	1 PPB
	В :	O PPB	1 PPB.
	C	O PPB	1 РРВ
	D	О РРВ	1 PPR
			**************************************
	-		
	<del></del>		
		<del></del>	

[ Mark (X) this box if you attach a continuation sheet.

9.07	weignted Average (	egory represented in question 9.06 TWA) exposure levels and the 15-min stion and complete it separately for	nute neak evaceure levels
CBI	Process type	MANUFACTURE OF POLYURETHANE FO	DAM CUSHTONS
·'	Work area		
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m³, other-specify)	15-Minute Peak Exposure Leve (ppm, mg/m³, other-specify)
	A	O PPB	O PPB
	В	O PPB	O PPB
	C.	O PPB	O PPB
	D	O PPB	O PPB
	****		
	-		
	T-1		
	<u>.</u> .		
	٠,٠		
	•		
		•	

9.07	Weighted Average (	egory represented in question 9.06 TWA) exposure levels and the 15-min stion and complete it separately fo	nute peak exposure levels.
CBI			
[_]	Process type	MANUFACTURE OF POLYURETHANE I	FOAM CUSHIONS
	Work area	····. <u>7.</u>	UNLOADING ZONE
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)	15-Minute Peak Exposure Leve (ppm, mg/m³, other-specify)
	A	О РРВ	5 PPB
	В	О РРВ	5 PPB
	C	О РРВ	5 PPB
	D	O PPR	5 PPB
	-		
			`

PART	R	UORK	PLACE	MONITORING	DDCCDAM
LUUI	D	#ULL	FLACE	MONTIONING	FRUSKAN

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CB1

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples <sup>1</sup>	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	N/A	N/A	N/A	N/A	N/A	N/A
General work area (air)	10	184/days	Continueous	s_D	Yes	Under 5 months
Wipe samples	_N/A	N/A	N/A	N/A	N/A	N/A
Adhesive patches	N/A	N/A	N/A	N/A	N/A	N/A
Blood samples	N/A	N/A	N/A	N/A	N/A	N7A
Urine samples	N/A	N/A	N/A	N/A	N/A	N/A
Respiratory samples	N/A	N/A	N/A	N/A	N/A	N/A
Allergy tests	_N/A	N/A	N/A	N/A	N/A	N/A
Other (specify)						
Other (specify)		-		<del></del>		
Employee physicals	1-10			D	No	_ 30
Other (specify)				-		
				<del></del>		

<sup>&</sup>lt;sup>1</sup>Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) Continueous gas-monitor

<sup>\*</sup>D = Other (specify) Medical clinic

<sup>[</sup>\_\_\_ Mark (X) this box if you attach a continuation sheet.

	Sample Type	ogy ·							
	General work area	Automatic sampler: at employee work station.							
	Employee physicals	Taken prior to	employment.						
	Medical clinic	Prior to employment.							
•		·							
9.10	If you conduct persona	al and/or ambient	air monitoring fo	r the listed o	whatanaa				
	specify the following	information for e	ach equipment type	e used.	substance,				
<u>CBI</u> [ <u>]</u> ]	Equipment Type 1	Detection Limit <sup>2</sup>	Manufacturer	Averaging Time (hr)	Model Number				
	E	A	M.D.A.	8/day	7100				
					-				
		-							
		-							
	Use the following cod  A = Passive dosimeter  B = Detector tube  C = Charcoal filtrati  D = Other (specify)  Use the following cod  E = Stationary monito  F = Stationary monito	on tube with pump es to designate am rs located within rs located within	bient air monitor work area facility						
	G = Stationary monito H = Mobile monitoring I = Other (specify)	equipment (specif	y)						
	<sup>2</sup> Use the following code A = ppm	es to designate de	tection limit uni	ts:					
	B = Fibers/cubic cent: C = Micrograms/cubic :	imeter (f/cc)							

_] 1		<u>T</u> (	est Desci	iptio	<u>n</u>	•		(vee	kly, mo	Frequenc	y early,	etc.)
	Pulm	anary fu	nction t	est				Year	ly			
			**/	••	-							
		F 45	. Same Pro. S						· <del>-</del>	5 55 Jak	•	
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							•					
,							•					-
		,	•		•		•					
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	alle.											
					•							

PART	C ENGINEERING CONTROLS			<u>.</u>	:
9.12 CBI	Describe the engineering cont to the listed substance. Pho process type and work area.	rols that you tocopy this qu	use to reduce o	r eliminate work lete it separate	cer exposurely for eac
[ <u>]</u> ]	Process type				
	Work area	• • • • • • • • •	Argumento sora a compre-	•• Bulk storage	
	Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
	Ventilation:				
	Local exhaust	Yes	1972	No	N/A

N/A

1972

N/A

N/A

1972

N/A

No

N/A

N/A

N/A

N/A

<u>''N/A</u>

N/A

N/A

N/A

N/A

Yes

N/A

N/A

Yes

Sliding doors

2-10' X 54" wide,

Other (specify)

General dilution

Other (specify)

Wind turbines

Mechanical loading or packaging equipment

Vessel emission controls

[\_] Mark (X) this box if you attach a continuation sheet.

CBI	Describe the engineering of to the listed substance. process type and work area	Photocopy this	question and comp	lete it separa	tely for each
[_]	Process type				
	Work area Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Jnloading are Year _Upgraded
	Ventilation:				
	Local exhaust	Yes	1972	No	N/A
	General dilution	N/A	N/A	N/A	N/A
	Other (specify)				
8"x95"	Double doors (2 sets)	Yes	1972	No	N/A
	Vessel emission controls	N/A	<u>N/A</u>	N/A	N/A
	Mechanical loading or packaging equipment	N/A	<u>N/A</u>	N/A	N/A
	Other (specify)	•			
		•			

RT	C ENGINEERING CONTROLS				
12	Describe the engineering conto the listed substance. Plances type and work area.	ntrols that you hotocopy this o	u use to reduce o question and comp	r eliminate wor lete it separat	ker exposure ely for each
<u> </u>	process type and work area.				
_}	Process type	. Manufacture	of polyurethan i	foam cushions.	
	Work area	• • • • • • • • • • • •		·· Lab area.	
	Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
	Ventilation:				
	Local exhaust	<u>Yes</u>	1972	_Yes	1986
	General dilution	N/A	N/A	_N/A	N/A
	Other (specify)				
	Wall air conditioner	Yes	1986	N/A	N/A
	Vessel emission controls	N/A	N/A	_N/A	N/A
	Mechanical loading or packaging equipment	N/A	N/A	N/A	N/A
	Other (specify)				
		N/A	N/A	N/A	N/A

<i>.</i> — ,							1			-1
l	Mark	(X)	this	pox	11	you	attacn	а	continuation	sneet.

PART C EN	GINEERING	CONTROLS
-----------	-----------	----------

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

\$

<u>CBI</u>

Process type			_	
Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
Ventilation:				
Local exhaust	Yes	1972	N/A	N/A
General dilution	N/A	N/A	N/A	N/A
Other (specify)				
	N/A	N/A	N/A	N/A
Vessel emission controls	N/A	N/A	N/A	N/A
Mechanical loading or packaging equipment	N/A	N/A	N/A	N/A
Other (specify)				
	N/A	N/A	N/A	N/A

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

PART	С	ENGINEERING	CONTROLS
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9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type	Manufacture	of polyurethane	foam cushions.	
Work area	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	- Pour room	
Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
Ventilation:				
Local exhaust	Yes	1972	N/A	N/A
General dilution	N/A	N/A	N/A	N/A
Other (specify)				
	N/A	N/A	N/A	N/A
Vessel emission controls	N/A	N/A	N/A	N/A
Mechanical loading or packaging equipment	N/A	N/A	N/A	N/A
Other (specify)				
	N/A	N/A	N/A	N/A

<sup>[</sup>\_] Mark (X) this box if you attach a continuation sheet.

#### PART NO. PRICE

#### SUPPLIES

Thermal Printer Paper (10 rolls)	
Gulton Printer (black face plate)780903	\$ 105.00
Seiko Printer (tan face plate)711289	\$ 70.00
Instruction Manual (all gases except Diisocyanates)	
Standard Paper	\$ 30.00
Clean Room Paper	\$ 75.00
<u>Instruction Manual</u> (Diisocyanates)711997	\$ 30.00
Sample Line Filter	\$ 11.00
Hydrogen Sulfide Scrubber	\$ 44.00

<u>Chemcassette Detection Tapes.</u>
Refer to separate price list for gases, part numbers, and prices.

Prices valid in United States only.

## PRICE LIST

MDA Scientific, Inc.® 405 Barclay Blvd., Lincolnshire, Illinois 60069 Phone: 800-323-2000 (in IL 312/634-2800) • Telex: 72-6399 MDA-USA • Fax. 312-634-1371

March 1, 1988

970360

#### SERIES 7100 CONTINUOUS MONITOR

DESCRIPTION	PART NO.	PRICE
Series 7100 Continuous Monitor	.710000	\$8300.00
Microprocessor-controlled single-point moni detection and measurement of toxic gases. to be detected (up to 8) from list below. instruction manual, calibration for one gas	Specify ga. Price incl	s or gases udes

Chemcassette for each calibration requested.

GAS CALIBRATIONS: Factory installed detection software. Limit 8 per instrument. Note: Gas calibration for disocyanates, hydrazines, or phosgene cannot be combined with any other calibrations.

Ammonia (NH3)711353	\$ 250.00
Bromine (Br2)711380	\$ 250.00
Chlorine (Cl2)711352	\$ 250.00
Chlorine Dioxide (ClO2) (1)711339	\$ 250.00
Diisocyanates (2)	•
CHDI711377	\$ 250.00
HDI711375	\$ 250.00
HMDI711372	\$ 250.00
IEM711371	\$ 250.00
IPDI711368	\$ 250.00
MDI711365	\$ 250.00
NDI711346	\$ 250.00
PPDI711384	\$ 250.00
TDI711364	\$ 250.00
TMDI711345	\$ 250.00
Hydrazines (3)	•
MMH711369	\$ 250.00
N2H4711367	\$ 250.00
UDMH711381	\$ 250.00
Hydrides (4)	
Arsine (AsH3)711350	\$ 250.00
Diborane (B2H6)711359	\$ 250.00
Disilane (Si2H6)711382	\$ 250.00
Germane (GeH4)711361	\$ 250.00
Hydrogen Selenide (H2Se)711362	\$ 250.00
Phosphine (PH3)711358	\$ 250.00
Silane (SiH4)711360	\$ 250.00
Stibine (SbH3)	\$ 250.00
• - •	

(Gas calibrations continued on next page)



#### ALLEN FOAM CORPORATION \_\_\_\_\_

INTER-HOUSE CORRESPONDENCE

TO:

STAFF AND SUPERVISORS

SUBJECT:

#### ANNUAL PULMONARY FUNCTION TEST

Starting this year, an annual Pulmonary Function Test will be conducted on site. This term identifies a group of tests which evaluates the ability of the lungs to perform their normal functions. Please arrange with the undersigned for a brief training time for your respective employee unit sometime this month.

The initial annual Pulmonary Function Tests will be conducted on Wednesday, 3-8-89 and Thursday, 3-9-89 between 11:55 a.m. and 3:40 p.m. according to the attached listing/schedule, which is arranged to allow for relief for one production worker at a time.

All employees will be required to undergo this annual testing as a baseline to establish and/or detect any malfunction of the resiratory system.

OLY F. ANG

cc: Wilson Cudd
Attachments

#### Other Features

The Series / 100 provides a variety office features to enhance monitoring satility and reliability; including:

Class Friendly Software: — The 7100's substituted software: — The 7100's substituted software: program is written for operational simplicity, guiding the design operational simplicity and normal operation o

ass selecting the new response curve and changing the Chemcassette and

Hattery Buck Up — In the event power is disrupted an internal battery back-up protects all stored manitoring and systems status information. The system status information indicating the last provides a printout indicating the exact time power was lost and restored.
For added safety and convenience, the
Series 700 will "power up" in the
monitoring mode if it was in that mode when power was lost.

4208m/A Output — Monitoring information may be feel directly into computer or control systems via a 420 mA output start permitting simplified control of ventilation of process equipment.

millocumentation Capa-Concentration data: may be transmitted to control rooms, security stations; or other remote locations with and optional Remote Printer/Alarm Inter-

RS 232 Interface - Monitoring data may also be transmitted directly into mainframe or desk top computer sys-tems via the optional RS 232 interface.

ToniScoper — The optional ToxiScope Manitoning Network allows you to link up to tal Series 2100 monitors into a single. ntralized surveillance, control, and taxacquisition system. For more information; refer to data sheet #970731.

Duty Cycle/External Trigger — For applications where continuous monitoring is not required, optional software is available which permits you to initiate menitoring at predetermined intervals or upon the receipt of a signal from an external device:

Not available on systems monitoring phosgener systems monitoring disocyanates or hydrazine may be programmed to detect other gases in that gas family only.

The second second

#### Response Time

The Series 7100 Continuous Monitor responds to catastrophic (10 times TLV) leaks in as little as 2 seconds; it detects TLV leaks in as little as 10 seconds. The following chart indicates the 7100's response to TLV,  $2 \times \text{TLV}$ , and  $10 \times \text{TLV}$  concentrations of various

•	Response Time (secon			conds) at
Substance	TLV	TLV	2 × TLV	10 x TLV
Ammonia	25 ppm	10	4	2
Bromine	100 ppb	45	25	. 2 . 5 2
Chlorine	1 ppm	10	4	2
Diisocyanates CHDI	(+)	60	00	_
HDI	(1) 5 ppb	140	30 70	15
HMDI	(1)	60	70 30	55555555555555555555555555555555555555
IEM	(i)	60	30	5
IPDI	5 ppb	60	30	5
MDI	5 ppb	60	30	5
NDI	5 ppb	60	30	5
PPDI	(1)	60 .	. 30	5
<u>TDI</u>	5 ppb	60	30	. 5
TMDI	(1)	60	30	5
Hydrazines				
N₂H₄	100 ppb	20	10	2
MMH	200 ppb	10	4	2 2 2
UDMH	500 ppb	10	4	2
Hydrides	50	40		
Arsine Diborane	50 ppb	10	4	2 2 2
Disilane	100 ppb	10 10	4 4	2
Germane	(2) 200 ppb	180	90	20
Hydrogen Selenide	50 ppb	30	15	20 5
Phosphine	300 ppb	10	4	2
Silane	5 ppm	10	4	2
Stibine	100 ppb	10	4	2
Hydrogen Bromide	3 ppm	10	4	2
Hydrogen Chloride	5 ppm	10	4	2
Hydrogen Cyanide	10 ppm	10	4	2
Hydrogen Fluoride	3 ppm	30	15	5
Hydrogen Sulfide	10 ppm	10	4	2
Nitric Acid	2 ppm	10	4	2
Nitrogen Dioxide	3 ppm	10	4	52222252225
Ozone	100 ppb	40	20	.5
p-Phenylene Diamine	20 ppb	60	30	10
Phosgene Sulfur Dioxide	100 ppb	10 10	4	2 2
Gairdi Dioxide	2 ppm	10	. 4	

<sup>(1)</sup> No TLV established for HMDI, IEM, PPDI, TMDI, or CHDI, 5 ppb used for response data.

<sup>(2)</sup> No TLV established; 5 ppm used for response data.

\*\*\*\*\*\*\*\*\*\*\*\* COMPANY NAME LOCATION SERIES 7100 SN-0310

#### \* MASTER MENU

- 1) SET TIME 2) SELECT GAS 3) SELECT OPTIONS 4) TAPE LOAD
- 5) CALIBRATION
- 6) ANALYSIS

#### GAS SELECTION MENU

NOW -->ASH3

- 1) ASH3
- 2) PH3

#### OPTIONS MENU

#### LEVEL #1

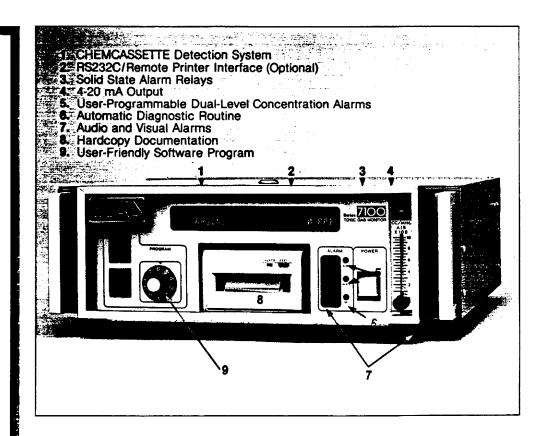
- 1) ALARM SETTING NOW --> 50 PPB
- 2) AUDIO ALARM NOW --> ENABLED

#### **LEVEL #2**

- 3) ALARM SETTING NOW --> 100 PPB
- 4) AUDIO ALARM NOW --> ENABLED
- 5) 1 MIN. PRINTOUT NOW --> ENABLED
- 6) SET 4-20MA RANGE NOW -->1000 PPB
- 7) INVERTED RELAYS NOW -->DISABLED
- 8) REMOTE PRINTOUT NOW --> ENABLED

#### CALIBRATION MENU

- 1) OPTICS
- DYNAMIC
- 3) MANUAL
- 4) A/D (SERY. USE)
- 5) 4-20 MA
- 6) LAMP VOLTAGE



#### Concentration Alarms

The Series 7100 Continuous Monitor features dual-level concentration alarms. These may be user-programmed to alarm at virtually any two concentration levels within the measuring range of the instru-ment or left at the factory programmed levels of one and two times the TLV of the target gas.

In the event that alarm levels are exceeded, audio and visual alarms are activated and the appropriate alarm relays energized. The condition will also be documented on the 7100's built-in thermal printer. At any time, the user may disable the audio alarm for either or both alarm points.

For added safety, the Series 7100 features a "catastrophe" alarm which is automatically activated whenever gas concentrations exceed 10 times the TLV. Programmed to activate both audio and visual alarms, this alarm cannot be disabled or over-ridden.

\*\*\*\*\*\*\* COMPANY NAME LOCATION SERIES 7100 SN-0310 \*\*\*\*\*\*\*\* 03/28/84 16:23:40 ARSINE PEAK CONC.- 2862 PPB ABOVE 10TLV- 500 PPB AVERAGE CONC. WAS: 205 PPB ASH3

Whenever gas concentration exceeds factory or user-programmed levels, the condition is documented in hardcopy format: audio/visual alarms and alarm relays are also activated.

Sulfur Dioxide

# The Manitaring People®

NOW AVAILABLE FOR: Chlorine Dioxide (ClO<sub>2</sub>) 28-100 ppb Sulfuric Acid (H2SO4) 75-2500 ppb

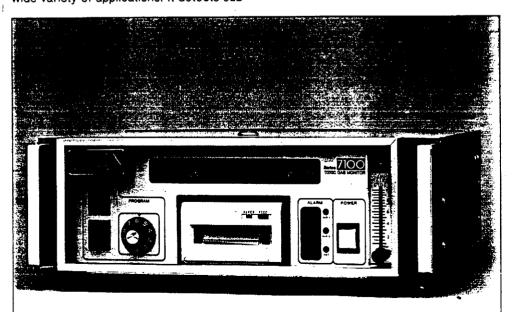
- Responds instantly to hazardous gas leaks
- Detects concentrations as low as 1 ppb
- Substance specific...no "false alarms" caused by other commonly used chemicals
- Field-proven Chemcassette® Detection System
- User-programmable dual-level concentration alarms
- Simple in-field calibration and maintenance
- Built-in documentation and data manipulation
- Operates continuously from 1 to 4 weeks...completely unattended

Series 7100 Continuous Monitors are designed for the accurate detection and measurement of toxic, reactive, and/or pyrophoric gases. They respond instantly to hazardous gas leaks, yet detect and document concentrations as low as 1 ppb in as little as one minute.

Combining the well-proven Chemcassette Detection System with sophisticated software control, the Series 7100 provides reliable, around-the-clock monitoring in a wide variety of applications. It detects sub-

TLV concentrations quickly, yet ignores other commonly used chemicals; as a result, production "up time" is optimized while false alarms are virtually eliminated.

In addition to this excellent sensitivity and specificity, the user-friendly 7100 also features field-programmable dual-level concentration alarms, a choice of alarm and documentation formats, and simple in-field calibration and maintenance. It will operate for up to 4 weeks completely unattended.



#### The New Generation: Series 7100 Continuous Monitors

The Series 7100 is the most advanced instrument in a long line of MDA continuous monitoring systems. It itilizes the well-proven Chemcassette Detection System and incorporates state-of-the-art microprocessor control to achieve a detection speed, accuracy, and sensitivity never before available in a gas monitoring system.

a gas monitoring system.

For all its sophistication, however, the Series 7100 is extremely easy to operate and maintain. In fact, it's ready to begin monitoring from almost the moment it's 'powered up.' All the user teally has to do is select the target gas, install the appropriate Chemicassette, and adjust the flow rate. Alarm levels and documentation formats are present at MDA and operate automatically.

at MDA and operate automatically.

Yet the Series 7100 also provides a great deal of monitoring flexibility. It may be factory programmed to detect and measure as many as 8 different uses; it features user programmable.

ises; it features user-programmable aual-level concentration alarms; and the iser-friendly software program makes it easy to change documentation formats, deactivate audio concentration alarms, the seven perform a dynamic gas calibration.

So for response integrity, operaional simplicity, and monitoring versatiliy, look to the new generation — Series 100 Continuous Toxic Gas Monitors.

#### Applications

The Series 7100's ease of operation and compact size give it the ability to pandle a wide variety of monitoring tasks in a wide variety of monitoring environments.

As a fixed station monitor, the 7100 provides around the clock exposure protection for gas storage, process, and other critical areas. It can be used as either a rack-mounted or stand-alone monitoring system.

Placed on a wheeled cart, the 7100 secomes an extremely versatile porable instrument, offering on the spot exposure protection during gas cylinder thanges, bulk schemical transfers, and guipment repairs fit's also an ideal projective device for use during emergency sponse and spill clean-up operations.

#### **Detection & Measurement**

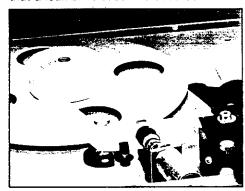
Each Series 7100 Continuous Monitoring System is specific and highly sensitive to a particular substance or group of substances. This selectivity is achieved through the use of a proprietary Chemcassette Detection System which provides up to 4 weeks of unattended monitoring.

During operation, the Chemcassette is incremented through a sampling "window" where it is exposed to a metered sample stream. If the target gas is present, a stain proportional to the concentration develops.

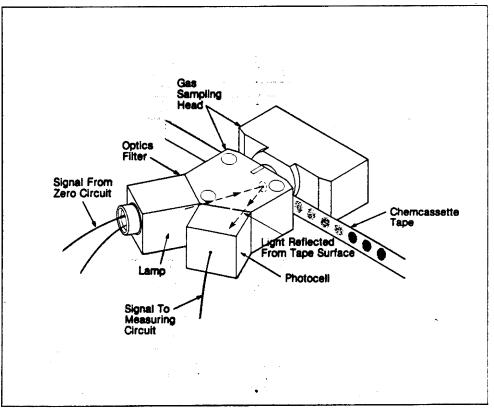
Simultaneously, a beam of light is reflected off the exposed portion of the tape and the intensity continually measured. As the amount of reflected light decreases due to stain development, the reduction is sensed by a photocell detector as an analog signal. This signal is converted to a digital format, matched to the gas response curve stored in the 7100's permanent memory, and displayed/documented as the actual concentration value. All these functions are microprocessor controlled.

The use of this spectrophotometric technique, in combination with microprocessor control, provides excellent accuracy, repeatability, and detectability of low ppb (parts-per-billion) concentrations.

CHEMCASSETTE® is a registered trademark of MDA Scientific, Inc., for a family of dry reaction substrates supplied in the form of a cassette tape. Individually formulated for a specific gas or group of gases, each Chemcassette is a non-toxic, proprietary chemical reagent system that acts as both a gas collection and analysis media, detecting and measuring nanogram amounts of the target gas. It is the only detection technique that leaves physical evidence that a leak or release has occured.



Chemcassette Detection Systems serve as both a trapping and analysis media, detecting and measuring nanogram amounts of the target gas.



By measuring the change in the amount of light reflected from the Chemcassette as it is exposed to



## The Monitoring People®

## MDA Scientific, Inc.

405 Barclay Boulevard • Lincolnshire, Illinois 60069 Phone: 800-323-2000 (in Illinois 312/634-2800) • Telex: 72-6399 MDA-USA • Fax: 312-634-1371

1095 E. Duane • Suite 107 • Sunnyvale, CA 94086 • Phone: 408-773-0222

7115 W. Tidwell • Unit 104 • Houston, TX 77092 • Phone: 713-690-1200

Authorized sales agents throughout the world.

No. 1 Haviland Road • Ferndown Industrial Estate

Wimborne, Dorset BH21 7RZ, England

Phone: (0202) 874318 • Telex: 418267 MDA-UK • Fax: (0202) 877042

MST Micro Sensor Technologie (European Headquarters) Furstenrieder Straße 217 • 8000 Munchen 70 • Germany/FRG Phone: 089-716066 • Telex: 17898582 • Teletex: 2627898582

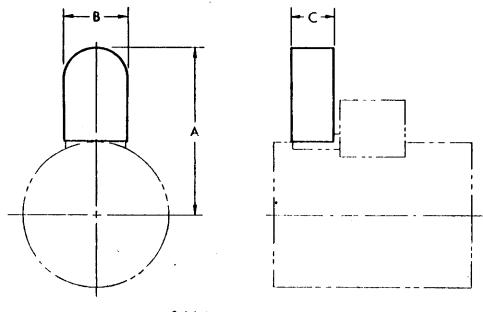
Sibata Scientific Technology, Ltd. 1-25, Ikenohata 3-Chome, Taito Ku • Tokyo, Japan Phone: (03) 822-2111 • Telex: 265-5595

General:Specil	ications:
	User-programmable dual-level
Alarm Relays:	Solid state AC relays; solid state DC relays optional
Output:	4-20 mA; RS232 optional:
Sampling Distance: Repeatability:	
Commentation	att TEV: Built-in thermal
cocumentation.	printer. Documents alarm conditions, minute-by-minute concentration; 8-hour TWA <sub>2</sub> .
Operating:	
Temperature: Flanges Enclosure:  Dimensions: Weight:	32° to: 104° F.  Designed: for: use in non-hazardous: atmospheres; special enclosures available for use in hazardous or combustible environments.  194° rack mounting optional.  16.5 × 43.2 × 45.7 cm (Approx.)
Pawers	115 V/60 Hz or 220
	V/503 HZ:

Performance Specifications		
Substance	Standard Range*	Lower Detectable Limit
Ammonia (NH <sub>3</sub> )	0-50 ppm	1 ppm
Bromine (Br <sub>2</sub> )	0-1000 ppb	40 ppb
Chlorine (Cl <sub>2</sub> )	0-10 ppm	0.2 ppm
Diisocyanates	.,	
CHĎI	0-200 ppb	2 ppb
HDI	0-50 ppb	4 ppb
HMDI	0-80 ppb	2 ppb
IEM	0-200 ppb	5 ppb
IPDI	0-200 ppb	2 ppb
MDI	0-200 ppb	2 ppb
NDI	0-50 ppb	2 ppb
PPDI	0-200 ppb	1 ppb
TDI	0-200 ppb	1 ppb
TMDI	0-80 p <b>pb</b>	3 ppb
Hydrazines		•
N <sub>2</sub> H <sub>4</sub>	0-1000 ppb	10 ppb
MMH	0-2000 ppb	10 ppb
UDМН	0-50 <b>00 ppb</b>	5 ppb
Hydrides		
Arsine (AsH <sub>3</sub> )	0-500 ppb	3 ppb
Diborane (B <sub>2</sub> H <sub>e</sub> )	0-1000 ppb	2 ppb
Disilane (Si <sub>2</sub> H <sub>e</sub> )	0-50 ppm	0.3 ppm
Germane (GeH <sub>4</sub> )	0-2000 ppb	150 ppb
Hydrogen Selenide (H₂Se)	0-1000 ppb	2 <u>1</u> ppb
Phosphine (PH <sub>3</sub> )	0-3000 ppb	5 ppb
Silane (SiH <sub>4</sub> )	0-50 ppm	0.4 ppm
Stibine (SbH <sub>3</sub> )	0-1000 ppb	10 ppb
Hydrogen Bromide (HBr)	0-30 ppm	0.3 ppm
Hydrogen Chloride (HCI)	0-100 ppm	0.2 ppm
Hydrogen Cyanide (HCN)	0-100 ppm	0,5 ppm
Hydrogen Fluoride (HF)	0-30 ppm	0.7 ppm
Hydrogen Sulfide (H₂S)	0-50 ppm	0.2 ppm
Nitric Acid (HNO <sub>3</sub> )	0-20 ppm	0.1 ppm
Nitrogen Dioxide (NO <sub>2</sub> )	0-50 ppm	0.4 ppm
Ozone (O <sub>3</sub> )	0-1000 ppb	8 ppb
Phosgene (COCI <sub>2</sub> )	0-1000 ppb	12 ppb
P-Phenylene Diamine (PPD)	0-200 ppb	2 ppb
Sulfur Dioxide (SO <sub>2</sub> )	0-20 ppm	0.1 ppm
Dioxido (002)	0 20 ppm	0.1 ppm

<sup>\*</sup>Special ranges available; consult MDA.

Specifications are for typical applications and are subject to change without notice. Consult MDA for full applications assistance.



#### **DIMENSIONS** [INCHES]

SIZE	^	8	с
18	261/8	615	5%
21	27%	61/8	515
25	311/6	7% <u>a</u>	6½
29	331/8	75a	614
33	- <del>36</del> 1⁄s	·····	717
38	39%	91/8	11/2
43	43:	- 1-1 in	H+
48	46 A	1]1.6	815
6.1	53	456.	91,5
60	56	15%	915

Tolerance: 光绪"

## Solid sheet steel construction

Dimensions should not be used for construction purposes unless certified.

20433-2602 Customer's Order No. \_\_\_ Shipping Tag ★ POUR EXHAUST 2602-6 Shipping Tag \* \_

Tag	Size	Quantity
*	38	1
(3)		
*		

CERTIFIED FORM NO DRAWING C-42

> gier e single JOHNSON AUGUS

New York Blower

**BELT GUARD** for VANEAXIAL and DUCT FANS

DRAWING NUMBER

J-1595-2

CERTIFIED PAL/mg

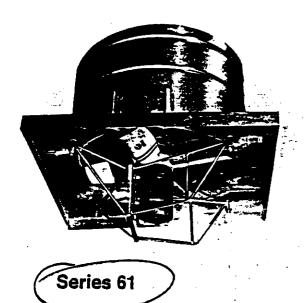
ork area		Process type Manufacture of polyurethane foam  Work area				
			Bulk storage.  Reduction in Worker			
	t or Process Modifica  Oflow meter used for		Exposure Per Year (%)			
purposes.						
		-				
San I	··					
	Elimenation of ISO	Elimenation of ISO flow meter used for purposes.	Elimenation of ISO flow meter used for inventory purposes.			

(F

Parameter statement of the statement of

l Proces	ss type	• Manufac	ture of r	olvireth:	ane foam c	ushions	
	ırea			• • • • • • • • • •		ompound platfor	m/high
	Equipment	or Process	Modificat	tion	p.	ressure pump an Reduction in Exposure Per	
Day 1	tank, high pres	sure pump a	rea: vent	ilation/e	exhaust	50%	
insta	allation.						
	-			-			
	,						
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		<u>.</u> .					
	**************************************						
.a.							
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## <u>opniast kool vent (nlect nlike)</u>



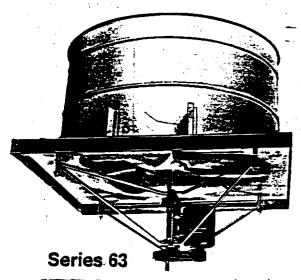
- Sizes 18" to 48", 4500 to 34,350 CFM at free air.
- Gaivanized steel construction.
- One-piece cast aluminum airfoil type 2-, 3-, 4-bladed propellers.
- Motors are totally enclosed air over.
- For complete information on Roof Vents, see Bulletin A-136.

#### **Rating Table**

Size	Type	No. of Blades	HP	RPM	CFM 0° SP	Phase	Ship Wgt	Approx. dBA @ 5"
18	WF3	4	1/2	1725	4500	1-3	135	71.5
24	ND3 WF4	2 4	1/4 1/2	1725 1140	5120 6800	1-3	150 168	67.5 72.I
28	WH4	4	I	1150	10400	3	230	77.7
32	NH3 NF4 LI4	2 2 3	1 1/2 1/2	1750 1150 1150	11820 9930 12630	3 3 3	228 224 295	82.0 75.3 74.0
36	NH 445	2 3 3	1 2 1	1150 1150 860	14800 17700 13400	3 3	294 328 326	77.2 81.3 74.2
40	NJ4	2	2	1160	20630	3	350	82.0
44	NK4 LK5	2	3	1160 870	27050 24850	3	506 550	85.6 82.5
48	NL4 NJ5	2 2	5 2	1160 870	34350 25450	3 3	648 635	84.9 78.4

Note: The dB<sub>A</sub> values shown above are based on Hartzell laboratory tests and are not indicative of actual installation values.

# > Upblast Roof Vent (Belted)



Available under the 20 day modified plan.

- Sizes 48" and 60", 31,930 to 52,850 CFM at free air.
- An economical approach to low-speed, low-noise ventuation.
- Galvanized steel construction.
- One piece, cast aluminum, 3-bladed airfoil-type propeller. Excellent efficiency at slow speeds.
- · Motors are totally enclosed, air over.
- For complete information on Roof Vents, see Bulletin A-136.

#### Rating Table

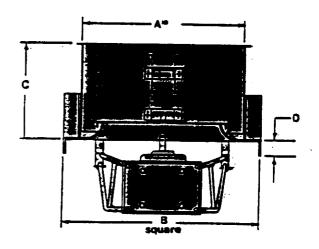
Size	Туре	No. of Blades	HP:	Fen RPM-	CFM - O' SP	Phase	Ship Wgt,	Approx. dBA @ 5'
48	LL43	3	5	895	31930	.3	595	81.7
60	LL3 LN3	3	5 10	595 747	42000 52850	3	850 1020	80.6 87.0

Note: The dBA values shown above are based on Hartzell laboratory tests and are not indicative of actual installation values.

### Principal Dimensions (Series 61 & 63 units)

Fan Size	18	24	28	32	36	40	44	48	60
Α	24	30	34	38	44	48	52	56	68
ß	28	36	42	42	48	50	54	581/4	701/4
۱.	16¾	20%	20%	243/4	241/4	26¾	32¾	32¾	38¾
D	2	2¾	2¾	2¾	2¾	23/4	23/4	3¾	3¾

Note: Dimensions and specifications are subject to change. Certified. prints are available;



Series 61 Direct Drive Rating Table

Size	Type	No. of Blades	Blade Angle	HP .	Max. BHP	8PM	0=	140	CFM@S	P #*	1,4	Net Inst.
	PD2	6	Angio	1/4	.22	3450	1832	1725	1615	1400	1155	Weight #
12*	003	4		44	.10	1725	1390	1177	10.0	1.400	1133	60
14"	PD3	6		1/4	.08	1725	1705	1440				60
	003	4		1/4	.17	1725	2110	-1820				66
16"	PD3	6		1/4	.17	1725	2520	2250				60
	QD3	4	<u> </u>	V:	.27	1725	3040	2780	2500			67
	WE3	8		1/3	.26	1725	3240	2945	2490	ļ		87
18"	WF3	4		1/2	.55	1725	3850 4500	3520 4190	3225 3860	+		91
	WD4	4		1/4	.16	1140	2940	2490	3860		,	95 82
204	LF3	3		1/2	.47	1725	4665	4290	3975	3490	-	103
, 20° .	WG3	4		3/4	.74	1725	5900	5540	5200	4800		119
	ND3	2		1/4	.28	1725	- 5120	1				123
	NF3	2	ļ	1/2	.56	1725	6630	5830	4980			131
	NG3 PH3	6		3/4	1.12	1725	7400	6740	6000	5000		139
24"	PI3	6		11/2	1.12	1750 1750	9060	7680 8700	7230	6770	6310	155
	W13	4	<del></del>	2	2.06	1750	10380	9960	9550	7850 9100	7250 8630	163 167
	LE4	3	1	1/3	.30	1140	5375	4750	3330	3100	0030	150
	WF4	4		1/2	.57	1140	6800	6140	5400		1	163
	NF3	2		1/2	.45	1725	7420	6320				138
	NG3	2		₹4	.72	1725	9280	8350	7300	5930		138
200	NH3	2		1	1.00	1750	9850	8990	8050	7000		150
28"	PI3 PJ3	6	1	11/2	2.03	1750 1750	10300	9830	9360	8850	8300	174
	LG4	3	+	3/4	.68	1140	12080 8380	11600 7680	11100 6900	10560 5900	10000	178
	WH4	4	<del> </del>	1	1.11	1160	10400	9670	8920	8170		165 158
	NH3	2		1	1.00	1750	11820	10620	9330	7650		201
	NJ3	2		2	2.02	1750	15320	14370	13330	12250	11000	213
32"	NF4	2		1/2	.55	1140	9930	8400				· 189
J	LI4	3		1 1/2	1.53	1160	12630	11750	10900	9930	7900	241
	WJ4	4		2	2.2	1160	15170	14370	13550	12800	11700	249
	WH5 NJ3	2		1 2	.93 2.01	870	11410	10270	9100	10000	10070	229
	NK3	2		3	2.82	1750 1750	17270 20020	15910 18850	14470 17600	12900 16600	10970	222
	PL3	6		5 -	4.82	1750	22650	22000	21300	20500	15250 19550	250 282
ļ	NH4	2		1 -	1.12	1160	14800	13500	11800	20000	13330	226
36"	<b>∟</b> 14	3		2	2.33	1160	17700	16830	15900	14930	13800	248
	PK4	6		3	2.43	1160	18600	17750	16500	15200	13700	382
ŀ	WL4	4		5	3.83	1160	22000	21150	20250	19400	18200	322
}	LH5 WI5	3		116	.98	870	13400	12250	10900	11000		278
<del>i</del>	NJ4	2		11/2	1.64 2.25	870 1160	16610 20630	15370 19000	13970	11950		290
ŀ	PK4	6		3 .	2.90	1160	22200	20950	17200 19600	15150 18150	16300	312 356
ļ	PL4	6		5	4.90	1160	25900	25000	24100	23050	21850	381
400	NH5	2		1	.94	870	15550	13270	2 / 100	23000	22000	292
40"	PI5	6		11/2	1.25	870	16650	14900	12850			260
	<b>1</b> ,15	3		2	1.90	870	19230	18000	16630	15050	12000	340
}	WK5	4		3	3.47	870	23380	22150	20700	19000		364
	WI6	2		11/2	1.67	690	18300	16600	14650	15050		378
}	NJ4 NK4	2 1		3	2.17 3.50	1160 1160	23070 27050	20800 25150	18400 23150	15050 21200	18900	341 377
-	PL4	6		5	5.20	1160	29600	28500	27300	26000	24650	389
r	NH5	2		ī	.98	870	17730	14600			2 7000	345
44"	NI5	2		11/2	1.53	870	20410	17970	15200			353
	PJ5	6		2	2.16	870	21900	20300	18600	16600	13200	359
_	LK5	3		3	3.20	870	24850	23550	22100	20600	18750	385
-	WL5	4		5	5.10 i	870	30770	29450	27800	26150	24400	421
+	LI6 NJ4	3		1 ½ 1	2.15	690	19380	17700	15650	17750		365
-	NK4	2 2		3	3.12	1160 i	25500 28950	23200	20700	17750 21400	18000	419
H	NL4	2		<u> </u>	5.37	1160	34350	32500	30400	28100	18000   25550	431
_	AM4	4	20°	71/2	8.47	1160	41200	39650	38100	36500	34700	596
48" /	NJ5	2		2	2.18	870	25450	22900	19750		/ 00	455
<i>─</i>	AK5	4	19°	3	3.27	870	30030	27950	25700	22750	18600	523
	LL5	3		5	4.42	870	31250	29600	27850	25100	24100	543
	AJ6	4	23°	2	2.20	690	26500	23900	20700			539
ļ	AK6	6	24.5°	3	3.30	690	29830	27700	25100	20600		546

CFM shown is net flow at the discharge and includes static pressure loss through ventilator. Note: For aluminum construction – multiply weight by .75.

Describe all equipment or process modifications you have prior to the reporting year that have resulted in a reduce the listed substance. For each equipment or process modithe percentage reduction in exposure that resulted. Photocomplete it separately for each process type and work are	tion of worker exposur fication described, sta ocopy this question and
Process type Manufacture of polyurethane foam	cushions.
Work area	Pour room.
Equipment or Process Modification	Reduction in Work Exposure Per Year
Separation of hydraulic system: from high pressure	25%
injector & servo valve operation to just individual	
circuits.	

on and	fication describe ocopy this questi		exposure ti	ction	e reduc	entag	perc	the	BI
	cushions.	lyurethane foam	ıfacture of	<u>M</u>	• • • • • •	type	ess	Proc	j
	Strip station.	•••••	• • • • • • • • • • • •			a	are	Work	
	Reduction in Exposure Per	.on	cess Modific	t or P	uipment	Eq			
	50%		ens.	2) two	of (2	Latior	stall	Ins	
•									

9.13	Describe all equipment or process modifications you have me prior to the reporting year that have resulted in a reduct the listed substance. For each equipment or process modified the percentage reduction in exposure that resulted. Photocomplete it separately for each process type and work area	tion of worker exposure to ication described, state ocopy this question and
CBI		
[_]	Process type Manufacture of polyurethane foam c	
	. WUIR GIEG	Reduction in Worker
	Equipment or Process Modification	Exposure Per Year (%)
	De-mold area: venilation	25%
		**************************************
ĵ		
		•
[_]	Mark (X) this box if you attach a continuation sheet.	

9.14 <u>CBI</u>	In each work area	In order to reduce or elimina	ipment that your workers wear or use te their exposure to the listed e it separately for each process typ
[_]	Process type	Manufacture of polyureth	ane foam cushions.
		•••••	
		Equipment Types	Wear or Use (Y/N)
		Respirators	Yes
		Safety goggles/glasses	Yes
		Face shields	Yes
		Coveralls	Yes
		Bib aprons	No
		Chemical-resistant gloves	Yes
		Other (specify)	
		Booties	Yes
		Organic vapor mask	Yes

<u>CBI</u> [ <u> </u> ]      P				
	rocess type	Manufacture of polyurethan	ne foam cus	shions.
W.	ork area	•••••••••••••••••••••••••••••••••••••••	•••••	Compound platform/ high pressure pump ar
	<u> </u>	Equipment Types	Wear or Use (Y/N)	
	R	Respirators	Yes	
	S	afety goggles/glasses	<u>Yes</u>	
	· F	ace shields	<u>Yes</u>	
	C	Coveralls	Yes	
	В	ib aprons	No	
	C	hemical-resistant gloves	Yes	
	0	ther (specify)		
		Organic vapor masks	Yes	
	<u>_1</u>	Booties	<u>Yes</u>	

 $[\ ]$  Mark (X) this box if you attach a continuation sheet.

PART	D PERSONAL PROTECTI	VE AND SAFETY EQUIPMENT						
9.14 CBI	Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.							
[_]	Process type Manufacture of polyurethane foam cushions.							
	Work area Pour room							
			Wear or					
		Equipment Types	Use (Y/N)					
		Respirators	Yes					
		Safety goggles/glasses	_Yes					
		Face shields	Yes	•				
		Coveralls	<u>Yes</u>					
		Bib aprons	_No					
		Chemical-resistant gloves	_Yes					
		Other (specify)						
		Booties	Yes					
		Organic vapor masks	Yes					

ck (X) this box if you attach a continuation shee
---

9.14 <u>CBI</u>	in each work area substance. Photo and work area.	sonal protective and safety equal in order to reduce or elimina ocopy this question and complet	te their exposu e it separately	re to the listed v for each process type							
[_]	Process type Manufacture of polyurethane foam cushions.  Work area Lab area.										
	work area	• • • • • • • • • • • • • • • • • • • •	••••••	. <u>nan area</u> ,							
		Equipment Types	Wear or Use (Y/N)								
		Respirators	No								
		Safety goggles/glasses	Yes								
		Face shields	Yes								
		Coveralls	No	•							
		Bib aprons	No No								
		Chemical-resistant gloves	<u>Yes</u>								
		Other (specify)									
		Smocks	Yes								
		Organic vapor mask	Yes								
	<sup>2</sup> ≪ 2										

[_]	Mark (	(X)	this	box	if	you	attach	a	continuation	sheet.			
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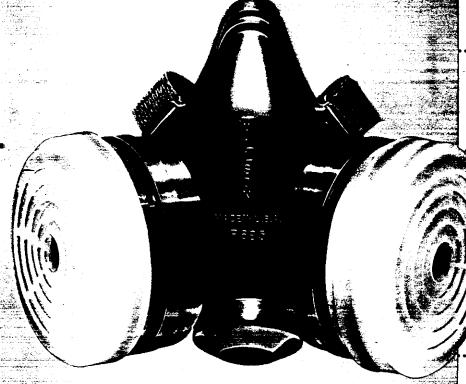
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PART D PERSONAL PROT	ECTIVE AND SAFETY EQUIPMENT	•	No of the second second
in each work are	rsonal protective and safety equiea in order to reduce or eliminat tocopy this question and complete	e their exposur	e to the listed
and work area. BI Process type	Manufacture of polyuretha		
Work area		••••••	Strip station.
	Equipment Types	Wear or Use (Y/N)	
	Respirators	No	
	Safety goggles/glasses	Yes	
	Face shields	No	
	Coveralls	No	
	Bib aprons	Yes	
	Chemical-resistant gloves	Yes	
	Other (specify)		
	Organic vapor masks	<u>Yes</u>	

# WILLSON 1200 SERIES RESPIRATORS

If earning

# NIOSH APPROVALS

isn't reason enough . . .



... how about seven more?

### DUSTS AND MISTS

R10 Filters with R682 Retaine respiratory protection against dusts a time weighted average not less than cubic meter, 2 million particles pe asbestos containing dusts and mist atmospheres containing less than 19.5 in atmospheres containing toxic gas approved in conjunction with:

R21 Organic Vapor Ca R22 Chlorine Ca R24 Ammonia & Methy Effective protection that also looks good. Feels good, too, so it gets worn on the job.

Wearers will breathe easier. The progressive design lessens breathing resistance.

## DUSTS, FUMES AND MISTS

R11 Filter Cartridge approved for resagainst dusts, fumes and mists havin average not less than 0.05 milligram dusts and mists having a time weighte than 2 million particles per cubic for containing dusts and mists. Not for us containing less than 19.5 percent mospheres containing toxic gases or proved in conjunction with:

R21 Organic Vapor Ca\_

Soft rolled edges add extra comfort. Comfortable when worn with glasses, too.

Four-piece elastic headband. Adjustable, of course. Also readily replaced.

### ORGANIC VAPORS

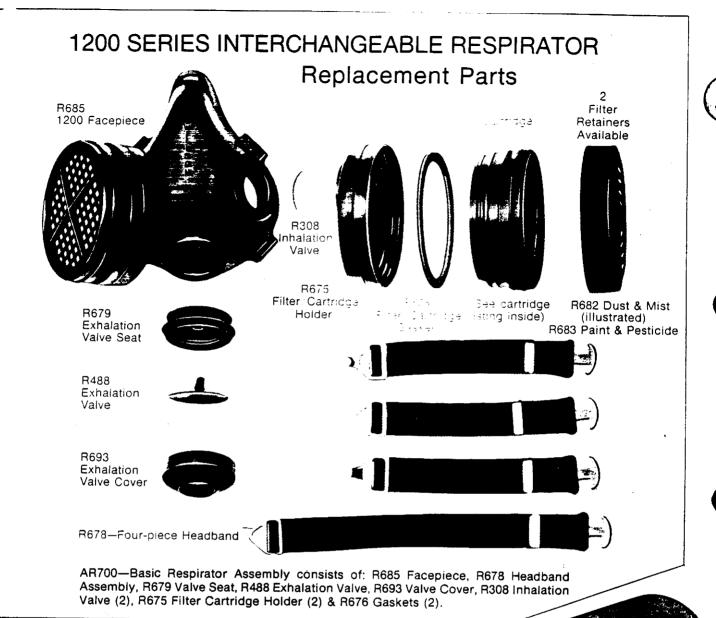
R21 Cartridge approved for respiragainst not more than one-tenth (0.1 vapors by volume. Not for use in atmoss less than 19.5 percent oxygen. Do not vagainst organic vapors with poor ward those which generate high heats of reas material in the cartridge. Maximum us will be lower than 0.1 percent where t produces atmospheres immediately dathealth.

PORTUGAÇOUER Note: Mists

R14 Filters with R683 Retainers wher tion with R21 Organic Vapor Cartridge respiratory protection against mists o and enamels. Not for use in atmospher than 19.5 percent oxygen. Cleaned in a jiffy. Take it apart. Sanitize with Willson GERMI-SOL® Put it together.

Wear it hard . . . and long. Willson respirators are made durable. To last.

One does many jobs. Basic facepiece accepts scores of different color coded cartridge and filter combinations. Versatile. Economical. Inventory is simplified.



WILLSON GERMI-SOL\* tablets make an ideal solution for sanitizing 1200 Series Interchangeable Respirators, which are readily disassembled for the purpose. Parts can also be quickly washed in warm, soapy water.

This brochure describes and illustrates products manufactured and/or sold by the Willson Products Division, ESB Incorporated. Under no circumstances should these products be used, other than by qualified and trained personnel, fully aware of the degree of protection these products provide, as well as their limitations. These products shall never be used, unless the instruction labels, manuals, and all other literature, accompanying these products, have been carefully read and understood. Knowledge of the information in this brochure, together with the information contained in labels, manuals, etc., is required for the proper use of this equipment. In call cases where there is any doubt about application or use, the Willson Products Div., ESB Incorporated should be consulted before use.

roducts be used, other than by these products provide, as well as ion labels, manuals, and all other dunderstood. Knowledge of the labels, manuals, etc., is required ubt about application or use, the use.

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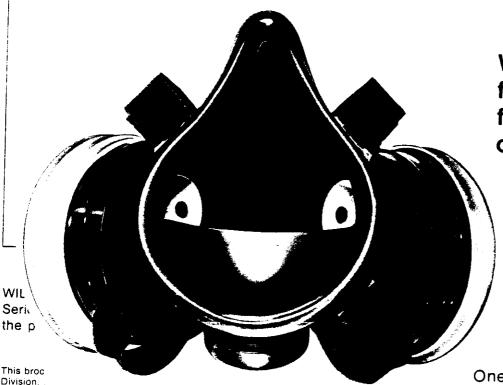






## INTERCHANGEABLE RESPIRATORS





Wide selection of filters and cartridges for complete range of protection.

This broc Division. qualified a their limita literature. informatic for the pro Willson Pr

WIL

Distr

One of the most effective features of the Willson 1200 Series is almost hidden from view . . . its exhalation valve assembly . . . which reduces the possibility of any contaminants entering the facepiece. While you're at it, take a peak at the soft rolled, resilient edges that fit facial contours so comfortably snug.

9.14	in each work area	nal protective and safety equi in order to reduce or eliminat opy this question and complete	e their expo	sure to the listed
<u>CBI</u> .	_	Manus Faralous and an all and a large	,	
[_]		Manufacture of polyuretha		
	work area	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • •	Unloading zone.
		Equipment Types	Wear or Use (Y/N)	
		Respirators	No	·
		Safety goggles/glasses	Yes	
		Face shields	No	
		Coveralls	No	
		Bib aprons	No	
		Chemical-resistant gloves	No	
		Other (specify)		
		Organic vapor masks	<u>Yes</u>	
			-	

The second of the second of the second secon

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

Process	type	• • • • • • • • •	Manufacture o	of	polyurethane	foam -	cushions
	- •						

Work Area	Respirator Type	Average Usage¹	Fit Tested (Y/N)	Type of Fit Test <sup>2</sup>	Frequency of Fit Tests (per year)
1	ARAP: Airline	E	Yes	QT	3
2	Resperator Apparatus	Ē	Yes	QT	3
3	11	E	Yes	QT	3
4	11	E	Yes	QT	3

<sup>&</sup>lt;sup>1</sup>Use the following codes to designate average usage:

A = Daily

B = Weekly

C = Monthly

D = Once a year

E = Other (specify)

QL = Qualitative

QT = Quantitative

Mark	(X)	this	box	if	vou	attach	а	continuation	sheet.

<sup>&</sup>lt;sup>2</sup>Use the following codes to designate the type of fit test:



AIRLINE RESPIRATOR APPARATUS

# OPERATING AND MAINTENANCE INSTRUCTION MANUAL

#### PERMISSIBLE

SUPPLIED AIR RESPIRATOR TYPE C - PRESSURE DEMAND



NIOSH

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APPROVAL NO. TC - 19C - 189

STEMATIONAL SAFET INSTRUMENTS W.C.

LANTATIONS

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MARIA - MOST Approve

- Complete State and Section of 17.78

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Bott City Aspertugie Harmon Aspertugie Suppler rings (Mr. 1889)

## **ARAP**

### AIRLINE RESPIRATOR APPARATUS

### OPERATING AND MAINTENANCE INSTRUCTION MANUAL

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INTERNATIONAL SAFETY INSTRUMENTS INC. 922 HURRICANE SHOALS ROAD LAWRENCEVILLE GEORGIA 30246

Telephone: 404/962-2552 Telex: 810.766.4594

### GENERAL CONSIDERATIONS FOR USERS OF SUPPLIED AIRLINE PRESSURE DEMAND BREATHING APPARATUS

#### ABSORBTION THROUGH OR IRRITATION OF THE SKIN

Some airborne contaminants are extremely irritating to the skin (e.g. Ammonia NH<sub>4</sub> and Hydrochloric Acid HCI) while others are capable of being absorbed through the skin and into the bloodstream with serious, possibly fatal results. Hydrogen Cyanice and many of the organic phosphate pesticides, such as thiophosphate insecticide and tetraethyl pyrophosphate (TEPP), will penetrate the unbroken skin. The Airline will not afford complete protection against these contaminants. If such materials are encountered or suspected, an effective full-body covering suit of impermeable material shall be worn with the Airline, as outlined in NFPA Publication No. 49 - 1969 'Hazardous Chemical Data'.

#### 2. FACEPIECE-TO-FACE SEALING PROBLEMS

Facial hair which interferes with the face-to-face seal or in the operation of the exhalation valve on the full facepiece of the Airline, should not be permitted. Such facial hair may include beards, sideburns, mustaches, long hairlines or bangs which pass between the sealing surface of the facepiece of the Airline and the face of the wearer. Head coverings, spectacle temple bars, or any other protuberance with the passes between the sealing surface of the facepiece and the face should not be permitted.

#### 3. VISION

When an Airline user must wear corrective lenses, they shall be fitted to provide good vision and shall be worn in such a manner so as not to interfere with the seal of the facemask. Temple bars or corrective spectacles which pass between the sealing surface of the full facepiece and the wearer's face may prevent a good seal of the facepiece to the face. Therefore, spectacles that have temple bars should not be used. If a user must wear corrective lenses while wearing Airline, they shall be mounted in the mask with the prescription lens mounting devices. The wearing of contact lenses by persons who must wear Airline should be reviewed, because one or both lenses could be popped out from the pressure of the facepiece at the side of the eye, or dust can be blown upwards by the incoming air and force it between the lens and the pupil of the eye.

#### 4. IRRITANT SMOKE TEST

The irritant smoke is produced by air flowing through a commercially available stannic or titanium tetrachloride smoke tube normally used to check the performance of ventilation systems. Ventilation should be provided when carrying out a test to prevent contaminating the room where the test is carried out with smoke. If the respirator wearer detects the penetration of the smoke into the respirator during the test, the wearer should be permitted to readjust the seal of the facepiece. The person operating the smoke tube directs smoke over the Airline when the wearer is inhaling, keeping the smoke tube about one foot from the facepiece, and watches the reaction of the wearer. If the wearer does not detect penetration of smoke into the facepiece, the test operator moves the smoke tube closer to the facepiece and observes the reaction of the wearer. When the smoke tube has been to within six inches of the facepiece and the wearer still has not detected penetration of smoke, the smoke may be directed at potential sources of leakage in the seal of the facepiece to the wearer (e.g. beneath the chin, around the cheek, temples and forehead). If the wearer still does not detect penetration of the smoke, the wearer may carry out a series of exercises such as deep breatning, turning

head from side to side, nodding head up and down, and talking while the smoke is directed at the resourator. If the wearer is unable to detect the benetration of smoke, he has achieved a sat sfactory fit.

#### 5. USER LIMITATION TO SUPPLIED AIRLINE PRESSURE DEMAND

There are both physiological and psychological limitations for Airline which should be considered. Among the conditions physicians or group leaders should consider are:—

- (a) emphysema
- (b) chronic obstructive pulmonary disease
- (c) bronchial astnma
- (d) x-ray evidence of pneumoconiosis
- (e) evidence of reduced pulmonary function
- (f) coronary artery disease
- (g) severe or progressive hypertension
- (h) epilepsy, grand mal or petit mal
- (i) anaemia, pernicious
- (j) diabetes, insipidous or mellitus
- (k) experience preathing difficulty when wearing an Airline
- (I) experience diaustrophobia or anxiety when wearing an Airline
- (m) abnormal EDG results from resting, or stress tests
- (n) punctured or ruptured ear drum

#### INTRODUCTION

The ARAP Airline Respirator Apparatus is a Type 'C' compressed air work unit.

#### **IMPORTANT**

This manual contains instructions for use and maintenance of the Airline Respirator Apparatus ARAP which should only be used and/or maintained by persons who are familiar with the instructions contained within this manual. The ARAP is intended to be worn by persons working with an air supplied respirator in areas where an irrespirable atmosphere is present.

#### DESCRIPTION

The apparatus is compressed air supplied airline respirator Type 'C' with egress unit and consists of a full facepiece, demand valve, air supply hose in 25 foot lengths (N.S. up to 300 feet may be connected).

The apparatus is designed to operate on hose lengths up to 300 feet maximum in total or multiples of 25 feet.

The air must be supplied to the inlet of the supply hose at a pressure between 80 to 120 psig.

The purity of the air supply is the responsibility of the operator.

The apparatus is approved only when the air supplied meets the requirements of Compressed Gas Association Specification G-7.1 for Type 1, Class D Gaseous Air, or a higher quality.

The air then passes to the Positive Pressure Demand Valve where it is reduced to a breathable pressure.

The tilt valve operated demand valve has a spring loaded neoprene diaphragm to give long reliable service. Once again its simplicity eliminates the need for adjustment.

The demand valve switch enables the wearer to apply positive pressure to the mask by releasing the spring on to the diaphragm. This ensures that the air pressure in the facepiece is always above the external atmospheric pressure and thus leakage due to a poorly fitted facepiece will be outward.

#### DONNING AND OPERATING INSTRUCTIONS

IMPORTANT: THE EQUIPMENT MUST NOT BE USED UNLESS IT HAS BEEN SERVICED IN ACCORDANCE WITH THIS HANDBOOK.

1. BEFORE ENTERING WORK AREA Lift and turn OFF the black safety pressure knob on the demand valve.

2. CONNECT SUPPLIED AIRLINE





#### 3. PUT ON APPARATUS



Ensure that the waist belt is fully slackened.



Put on the apparatus and adjust the shoulder strap until the apparatus is comfortable. Fit waist belt and adjust as required.



Hang facepiece strap around neck. With thumbs inside head harness straps, put chin into mask first and pull straps over head.

Position mask so that chin fits snugly into chin-cup and then gently tighten head harness, lower straps first. Do not over tighten.

#### 4. CHECK POSITIVE PRESSURE



Turn black knob on demand valve to the ON position.



Gently lift mask seal off the cheek and ensure that air flows freely out of the mask, proving that the air pressure in the mask is positive.

Next, hold breath. There shall be no outward leakage from the exhale valve as denoted by the noise of a constant flow of air from the demand valve.

#### 5 CHECK FACE MASK LEAKAGE

Disconnect air supply and place thumblover diug to block air supply, continue to preatne normally until air in apparatus is exhausted and the facepiece is builted gently anto the face. Hold breath for 10 seconds; any leakage will either be heard or shown by the mask moving away from the face. If leak is detected, re-connect air supply, re-adjust mask and head harness and re-test.

IF ANY ONE OF THE ABOVE TESTS FAILS, RETURN THE APPARATUS FOR SERVICING. MAKE A NOTE OF FAULT AND ATTACH TO APPARATUS.

#### AFTER USE INSTRUCTIONS

WARNING: Equipment should not be removed until the wearer is clear of the nazard area.

- 1. Lift and turn OFF the safety pressure demand valve switch.
- 2. Slacken off head harness and remove facepiece.
- 3. Slacken off shoulder strap and undo waist belt.
- 4. Take off apparatus.

#### AFTER USE CLEANING AND TESTING

WARNING: Do not immerse demand valve in water.

#### CLEAN FACEPIECE

- Unscrew demand valve from facepiece. Wash mask in cool to warm scapy water.
   Use toilet soap not detergent. Rinse thoroughly in clean running water.
- (b) After washing, shake to remove excess water and allow to dry away from direct heat or sunlight. Do not place facepiece 'visor down' on rough surfaces as the visor may become scratched.

WARNING: If the apparatus is likely to be stored at temperatures below freezing point 0°C, the facepiece must be thoroughly dried and finally lightly dusted with french chalk, paying particular attention to the valves.

- (c) When dry, polish the visor inside and out with a clean lint free cloth. The inside may be wiped with a suitable demisting agent.
- (d) Replace the mask ensuring that the demand valve is tightened with the supply hose fitted to pass over the right shoulder.
- (e) Ensure head harness is fully slackened ready to put on.

#### 2. CLEAN APPARATUS

Fully slacken shoulder strap and waistbelt. Clean off any dirt with a stiff brush or sponge.

#### 3. LEAK TEST OF APPARATUS

- (a) Check that there is no audible leak from demand valve.
- (b) Test all joints with soap and water bubble solution.

WARNING: Do not try to cure leaks by overtightening joints.

#### 4 CHECK POSITIVE PRESSURE

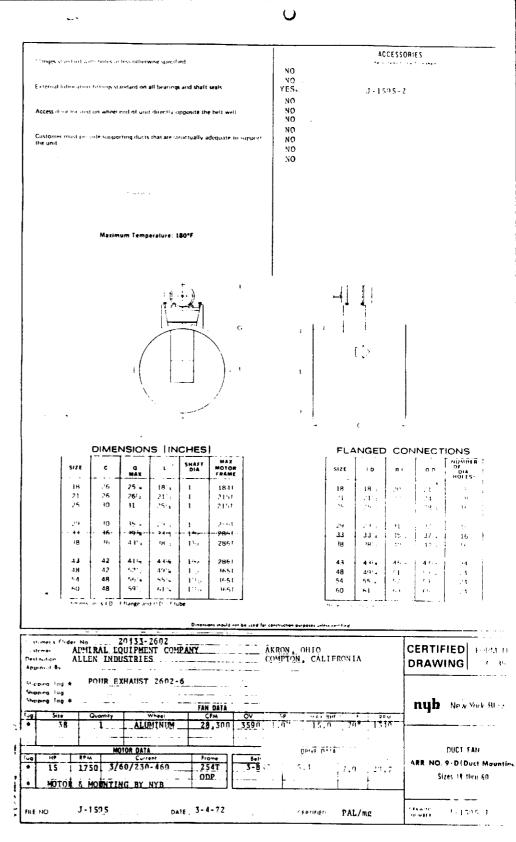
- 3) Connect apparatus to hir supply, and but on facepiede. Breath gently for fail a minute and then switch demand valve to ON position.
- Gently lift mask seal off the cheek and ensure that air flows treely out of the mask, proving that the air pressure in the mask is positive.
- d! Allow mask to reseal and hold breath. There shall be no outward leakage from the exhale valve as denoted by the noise of a constant flow of air from the demand valve. Switch demand valve to OFF ossition.

#### MONTHLY PERIODIC MAINTENANCE SCHEDULE

Apart from the normal testing carried out on the equipment after use, it must also undergo more thorough tests periodically to ensure maximum operational efficiency and safetilities suggested that maintenance is carried out monthly, or more frequently depending on usage.

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CBI	Process type	Manufactur	e of polvurethane	e foam cushions	š.,
,	Work area			·· Compound pl	
	Engineering Controls	Used (Y/N)	Year Installed	press. pump Upgraded (Y/N)	
	Ventilation:			·	
	Local exhaust	Yes	1972	Yes	1985
	General dilution	N/A	N/A	_N/A	_N/A
	Other (specify)				
	4- Blade 21" dia. blower	Yes	1984	N/A	N/A
	Vessel emission controls	N/A	N/A	N/A	N/A
	Mechanical loading or packaging equipment	N/A	N/A	N/A	N/A
	Other (specify)				
	-	<del></del>			



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Canges standard with holes unless otherwise specified.

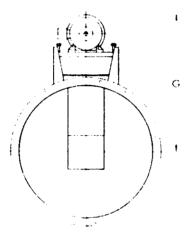
External lubrication fittings standard on all bearings and shaft seals.

Access door located on wheel end of unit directly opposite the belt well.

Customer must provide supporting ducts that are structually adequate to support the unit.

England Advention

Maximum Temperature: 180°F



#### DIMENSIONS [INCHES]

SIZE	с	G	L	SHAFT DIA	MAX MOTOR
	•	444	ı	l l	FRAME

ACCESSORIES

to Check Home to be furnished

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YES<sub>8</sub>. J-1595-2

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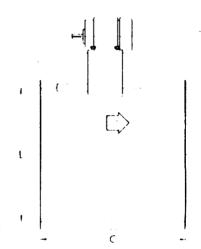
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#### FLANGED CONNECTIONS

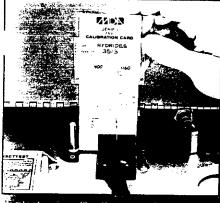
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#### **Calibration**

Each Series 7100 Continuous Monior is dynamically gas calibrated at time i manufacture using approved NIOSH malytical methods to verify gas concenlations. Under normal use, the Series 100 is extremely stable and does not

ADD is extremely stable and does not accurate the commended that calibration.

For optimum accuracy and performance, it is recommended that calibration is checked whenever the Chemicassette Detection Tape is replaced. This may be accomplished either electronically with the Calibration Card supplied with the astrument or dynamically with a test gas accomplished concentration. With either rethod, the instrument automatically calculates and executes all zero and spanicipustments. There are no potentioneters to adjust.



a electronic calibration procedure sets zero of span automatically; there are no potentimeters to turn or adjust.

#### Routine Maintenance

Other than periodically replacing assumple line filter and cleaning the sample line filter and cleaning the lics block, the only regular maintenage required by the Series 7100 is semicassette replacement. This should performed at either one or four week lervals, depending on the type of semicassette being used.

iemcassette being used.

Standard type Chemcassettes pro158 hours of uninterrupted monitor179 Type LP Chemcassettes provide 572
179 LP Chemcassettes provide 572

#### Documentation

The Series 7100 is designed to provide an accurate record of ambient air conditions. When concentrations exceed programmed alarm levels, the date, time, and concentration are printed out in hardcopy format. The system may also be used to document concentration on a minute-byminute basis and/or document accumulated 8-hour TWA's (time weighted average). TWA information may also be printed out on demand.

In all documentation modes, "realtime" concentration is indicated on the instrument's alpha/numeric display; this readout is updated every other second.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

COMPANY NAME

LOCATION

SERIES 7100 SN-0310

\*\*\*\*\*\*\*\*\*\*\*

ACCUMULATED AVERAGES ARSINE

AS OF 03/28/84 16:45;41

> ELAPSED TWA: 0 PPB

FOR: 8 HRS 1 MINS ENDING AT:

03/28/84 16:45:22

HIGHEST 15 MIN. AVG: 0 PPB

ENDING AT:

03/28/84 16:41:06

HIGHEST 1 MIN. AVG:

0 PPB

OCCURED AT : 03/28/84 16:45:22

The Series 7100 documents all pertinent monitoring information, including minute-by-minute and 8-hour averages

#### Diagnostics

The Series 7100 features an internal diagnostics system which continually monitors and verifies proper operation of the optics and tape transport systems.

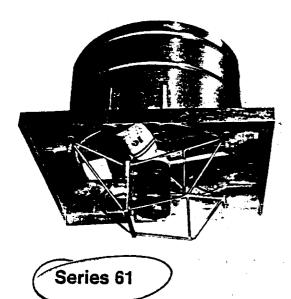
In the event of a malfunction which would disrupt monitoring, the condition is indicated on the built-in thermal printer and audio/visual alarms activated; these alarms may also be remoted to external printers, annunciators, and control panels via alarm relays. Events that will not disrupt monitoring, such as low Chemcassette and printer paper warnings, are indicated visually; the low Chemcassette warning is also indicated in hardcopy format when approximately 24 hours of monitoring time remain

TAPE OUT OF SENSOR

01/22/86 14:14:07 \*\*\*\*\*\*\*\*\*\*\*

Automatic test routines verify proper operations of the Series 7100; a systems status printout helps diagnose and correct malfunctions.

## **Upblast Roof Vent (Direct Drive)**



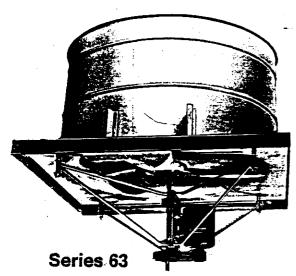
- Sizes 18" to 48", 4500 to 34,350 CFM at free air.
- Galvanized steel construction.
- One-piece cast aluminum airfoil type 2-, 3-, 4-bladed propellers.
- · Motors are totally enclosed air over.
- For complete information on Roof Vents, see Bulletin A-136.

#### **Rating Table**

Size	Туре	No. of Blades	HP	RPM	CFM 0° SP	Phase	Ship Wgt.	Approx. dB <sub>A</sub> @ 5'
18	WF3	4	1/2	1725	4500	1-3	135	71.5
24	ND3 WF4	2 4	√4 √2	1725 1140	5120 6800	1-3	150 168	67.5 72.1
28	WH4	4	1	1150	10400	3	230	77.7
32	NH3 NF4 LI4	2 2 3	1 ½ 1½	1750 1150 1150	11820 9930 12630	3 3 3	228 224 295	82.0 75.3 74.0
36	NH4 LJ4 LH5	2 3 3	1 2 1	1150 1150 860	14800 17700 13400	333	294 328 326	77.2 81.3 74.2
40	NJ4	2	2	1160	20630	3	350	82.0
44	NK4 LK5	2 3	3 3	1160 870	27050 24850	3	506 550	85.6 82.5
48	NJ5	2 2	5 2	1160 870	34350 25450	3	648 635	84.9 78.4

Note: The dB<sub>A</sub> values shown above are based on Hartzell laboratory tests and are not indicative of actual installation values.

## > 'Ipblast Roof Vent (Belted)



Available under the 20 day modified plan.

- Sizes 48" and 60", 31,930 to 52,850 CFM at free air.
- An economical approach to low-speed, low-noise ventilation.
- · Galvanized steel construction.
- One piece, cast aluminum, 3-bladed airfoil-type propeller.
   Excellent efficiency at slow speeds.
- · Motors are totally enclosed, air over.
- For complete information on Roof Vents, see Bulletin A-136.

#### **Rating Table**

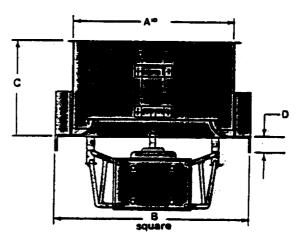
Size	Туре	No. of Blades	HP	Fen RPM	CFM - 0" SP	Phase	Ship Wgt.	Approx. dB <sub>A</sub> @ 5'
48	LL3	3	5	895	31930	. 3	595	81.7
60	LL3 LN3	3	5 10	595 747	42000 52850	3	850 1020	80.6 87.0

Note: The dBA values shown above are based on Hartzell laboratory tests and are not indicative of actual installation values.

#### Principal Dimensions (Series 61 & 63 units)

				•					
Fan Size	18	24	28	32	36	40	44	48	60
Α	24	30	34	38	44	48	52	56	68
8	28	36	42	42	48	50	54	581/4	701/4
С	16¾	20¾	20¾	24¾	243/4	26¾	32¾	32¾	38¾
D	2	2¾	2¾	2¾	2¾	2¾	23/4	3¾	3¾

Note: Dimensions and specifications are subject to change. Certified prints are available;



Series 61 Direct Drive Rating Table

		No. of	Blade		Max.			1	CFM @ SF			Net
Size	Type	Blades	Angle	HP	ВНР	RPM	0"	1/4"	1/4"	16"	1/2"	Weig
12"	PD2	6	1	1/4	.22	3450	1832	1725	1615	1400	1155	
	OD3	4		1/4	j .10	1725	1390	1177			ļ	<u> </u>
14"	PD3	6	<u> </u>	1/4	.08	1725	1705	1440				
14	003	4		1/4	.17	1725	2110	1820				
	PD3	1 6	1	V4	.17	1725	2520	2250				
16"	WD3	4		1/2	.27	1725	3040	2780	2500			
	QD3	8		1/4	.26	1725	3240	2945	2490	1		
	WE3	4		1/3	.37	1725	3850	3520	3225			
18"	WF3	4	<u> </u>	1/2	.55	1725	4500	4190	3860			<del> </del>
	WD4	4		1/4	.16	1140	2940	2490	3860	<del></del>	-	<del> </del>
			<del> </del>						2075	2400		
20"	LF3	3		1/2	.47	1725	4665	4290	3975	3490		
	WG3	4		3/4	.74	1725	5900	5540	5200	4800		]
	ND3	2	1	1/4	.28	1725	5120					1
	NF3	2		1/2	.56	1725	6630	5830	4980			
	NG3	2		3/4	.80	1725	7400	6740	6000	5000		1
	PH3	6		1	1.12	1750	8100	7680	7230	6770	6310	1
24"	PI3	6		11/2	1.50	1750	9060	8700	8300	7850	7250	l
	WJ3	4		2	2.06	1750	10380	9960	9550	9100	8630	ī
	LE4	3		1/3	.30	1140	5375	4750		1		1
	WF4	4		1/2	.57	1140	6800	6140	5400			1
			-		.45	1725	7420	6320	J+00	-	-	1
	NF3	2		1/2					7300	5020		
	NG3	2		3/4	.72	1725	9280	8350	7300	5930		1
	NH3	2		1	1.00	1750	9850	8990	8050	7000		1
28"	PI3	6		11/2	1.52	1750	10300	9830	9360	8850	8300	1
	PJ3	6		2	2.03	1750	12080	11600	11100	10560	10000	1
	LG4	3		3/4	.68	1140	8380	7680	6900	5900		1
	WH4	4		1	1.11	1160	10400	9670	8920	8170		1
	NH3	2		1	1.00	1750	11820	10620	9330	7650		2
	NJ3	2		2	2.02	1750	15320	14370	13330	12250	11000	. 2
	NF4			1/2	.55	1140	9930	8400	10000	12230	11000	1
32"		2		11/2			12630	11750	10000	0020	7900	
	LI4	3			1.53	1160			10900	9930		2
	WJ4	4		2	2.2	1160	15170	14370	13550	12800	11700	2
	WH5	4		1	.93	870	11410	10270	9100			2
	ИЈЗ	2		2	2.01	1750	17270	15910	14470	12900	10970	2
	NK3	2		3	2.82	1750	20020	18850	17600	16600	15250	2
ľ	PL3	6		5 -	4.82	1750	22650	22000	21300	20500	19550	2
İ	NH4	2		1	1.12	1160	14800	13500	11800			2
36" I	LJ4	3		2	2.33	1160	17700	16830	15900	14930	13800	2
.	PK4	6		3	2.43	1160	18600	17750	16500	15200	13700	3
ŀ	WL4	4		5	3.83	1160	22000	21150	20250	19400	18200	3
ŀ				1	20	070	10100		10000	19400	10200	2
}	LH5	3		11/	.98	870	13400	12250	10900	11050		
	WI5	4		11/2	1.64	870	16610	15370	13970	11950		29
ļ	NJ4	2		2	2.25	1160	20630	19000	17200	15150		3
l	PK4	6		3	2.90	1160	22200	20950	19600	18150	16300	3
Γ	PL4	6		5	4.90	1160	25900	25000	24100	23050	21850	3
	NH5	2		1	.94	870	15550	13270				2
10"	PI5	6		11/2	1.25	870	16650	14900	12850			2
ŀ	LJ5	3		2	1.90	870	19230	18000	16630	15050	12000	3.
}	WK5	4		3	3.47	870	23380	22150	20700	19000		3
ŀ	WI6	4		11/2	1.67	690	18300	16600	14650			3
······································				2	2.17	1160	23070	20800	18400	15050		3
}-	NJ4	2									19000	3
L	NK4	2		3	3.50	1160	27050	25150	23150	21200	18900	
Ĺ	PL4	6		5	5.20	1160	29600	28500	27300	26000	24650	3
(	NH5	2		1	.98	870	17730	14600				34
.4"	N15	2		11/2	1.53	870	20410	17970	15200			3
Γ	PJ5	6		2	2.16	870	21900	20300	18600	16600	13200	3.
ř	LK5	3		3	3.20	870	24850	23550	22100	20600	18750	38
ŀ	WL5	4		5	5.10	870	30770	29450	27800	26150	24400	42
F	L16	3		11/2	1.49	690	19380	17700	15650			36
į						1160		23200	20700	17750		41
ļ.,	NJ4	2		2	2.15		25500				10000	
	NK4	2		3	3.12	1160	28950	26600	24200	21400	18000	43
Γ.	NL4	2		5	5.37	1160	34350	32500	30400	28100	25550	44
-	AM4	4	20°	71/2	8.47	1160	41200	39650	38100	36500	34700	59
8"	NJ5	2		2	2.18	870	25450	22900	19750			45
- النسب	AK5	4	19°	3	3.27	870	30030	27950	25700	22750	18600	52
+			1.7	5				29600	27850	26100	24100	54
- 1	LL5	3	23°	2	4.42 2.20	870 690	31250 26500	23900	20700	20100	Z+100	53
<b>—</b>	AJ6	4										

CFM shown is net flow at the discharge and includes static pressure loss through ventilator. Note: For aluminum construction — multiply weight by .75.

PART	E WORK PRACTICES							
9.19 CBI	Describe all of the work eliminate worker exposure authorized workers, mark monitoring practices, proquestion and complete it	to the listed st areas with warnin vide worker train	ubstance (e.g ng signs, ins ning programs	., restrict e ure worker de , etc.). Pho	ntrance only to tection and tocopy this			
	Process type Manufacture of polyurethane foam cushions.							
	Work area	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • •		platform/high			
	Warning signs are presen	t in respect to	use of goggle	s and face st	nields. Shower			
	and eye wash station is	present. Authori	zed personnel	only signs a	are poste.			
	Use of color code for IS	o <b>.</b>		<del></del>	****			
				\\				
	Process type Manuf Work area	facture of polyu	rethane foam		n: high pressure			
	Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day			
	Sweeping	X						
	Vacuuming	N/A						
	Water flushing of floors	x						
	Other (specify)							
	Mark (X) this box if you as	ttach a continua	tion shoot					

	_							
9.19 <u>CBI</u>	Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.							
[_]	Process type Manufacture of polyurethane foam cushions.							
	Work area	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • •	··· Pour roc	m.			
	Authorized personnel only	y. Warning signs	in respect t	o face shield	ls are present.			
	Doors are maintained clo	osed.						
	·							
9.20	Indicate (X) how often you leaks or spills of the lisseparately for each process	sted substance.	Photocopy thi	ask used to cl is question an	lean up routine id complete it			
9.20	Indicate (X) how often you leaks or spills of the lisseparately for each process.  Process type Manuf	sted substance. ss type and work facture of polyu	Photocopy thi area.	is question an	lean up routine id complete it			
9.20	leaks or spills of the lisseparately for each process  Process type Manuf	sted substance. ss type and work facture of polyu	Photocopy thi area.	s question and	More Than 4			
.20	leaks or spills of the lisseparately for each process  Process type Manuf  Work area	sted substance. ss type and work acture of polyur Less Than	Photocopy this area.  rethane foam of the pour  1-2 Times	cushions.  room.  3-4 Times	More Than 4			
9.20	leaks or spills of the lisseparately for each process  Process type Manuf  Work area  Housekeeping Tasks	ted substance. ss type and work facture of polyu  Less Than Once Per Day	Photocopy this area.  rethane foam of the pour  1-2 Times	cushions.  room.  3-4 Times	More Than 4			
	leaks or spills of the lisseparately for each process  Process type Manuf  Work area  Housekeeping Tasks  Sweeping	Less Than Once Per Day	Photocopy this area.  rethane foam of the pour  1-2 Times	cushions.  room.  3-4 Times	More Than 4			
	leaks or spills of the lisseparately for each process  Process type Manuf  Work area  Housekeeping Tasks  Sweeping  Vacuuming	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam of the pour  1-2 Times	cushions.  room.  3-4 Times	More Than 4			
	leaks or spills of the lisseparately for each process.  Process type Manuf  Work area	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam of the pour  1-2 Times	cushions.  room.  3-4 Times	More Than 4			
	leaks or spills of the lisseparately for each process  Process type Manuf  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors  Other (specify)	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam of the pour 1-2 Times Per Day	cushions.  room.  3-4 Times	More Than 4			
	leaks or spills of the lisseparately for each process  Process type Manuf  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors  Other (specify)	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam of the pour 1-2 Times Per Day	cushions.  room.  3-4 Times	More Than 4			
	leaks or spills of the lisseparately for each process  Process type Manuf  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors  Other (specify)	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam of the pour 1-2 Times Per Day	cushions.  room.  3-4 Times	More Than 4			

CBI q	Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.							
[ <u>]</u> ]	Process type <u>Manu</u>	facture of polyu	rethane foam	cushions.				
W	ork area	••••••	• • • • • • • • • • • • •	··· <u>lab area</u>	<u> </u>			
<u> </u>	Authorized personnel onl	y. Eye wash stat	ion present.	Doors are kep	ot clased.			
_			*					
			ł		,			
_								
1	ndicate (X) how often you eaks or spills of the lis eparately for each proces	sted substance.	Photocopy thi	isk used to cl s question an	lean up routine nd complete it			
lo So Pr	eaks or spills of the liseparately for each procest rocess type Manus	sted substance. ss type and work facture of polyur  Less Than	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			
10 Se Pr We He	eaks or spills of the liseparately for each process rocess type Manustrate Manustrate American Manustrate Manustrat	sted substance. ss type and work facture of polyu	Photocopy thi area.  rethane foam  Lab	cushions.	More Than 4			
P: Vo	eaks or spills of the liseparately for each process rocess type Manufork area	ted substance.  ss type and work  facture of polyur  Less Than Once Per Day	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			
P: Wo Ho Sw Va	eaks or spills of the liseparately for each process rocess type Manufork area	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			
P: Wo Ho Sw Va	eaks or spills of the liseparately for each process rocess type Manufork area	ted substance.  ss type and work  facture of polyur  Less Than Once Per Day	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	nd complete it			
Ho Sw Va	eaks or spills of the liseparately for each process rocess type Manufork area	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			
1. Se Wo Wo Va Wa	eaks or spills of the liseparately for each process rocess type Manufork area	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			
1. Se Wo Wo Va Wa	eaks or spills of the liseparately for each process rocess type Manufork area	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			
1. Se Wo Wo Va Wa	eaks or spills of the liseparately for each process rocess type Manufork area	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			
1. se Pr We Sw Va	eaks or spills of the liseparately for each process rocess type Manufork area	Less Than Once Per Day  X  N/A	Photocopy this area.  rethane foam  Lab  1-2 Times	cushions.  area.  3-4 Times	More Than 4			

.19	Describe all of the work peliminate worker exposure	to the listed so	ibstance (e.g.	., restrict e	ntrance only to				
<u>BI</u>	authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.								
<u>_</u> ]	Process type Manufacture of polyurethane foam cushions.								
	Work area			Bulk stor	rage				
	Bulk storage off-limits t	o authorized per	sonnal only. S	Signs are post	ted. Eye wash				
	station is present. Doors	are maintained	closed.						
;									
	Manla ana		D 11						
. •	Work area	Less Than Once Per Day	Bull  1-2 Times Per Day	k storage.  3-4 Times Per Day	More Than 4 Times Per Day				
.3	:	Less Than	1-2 Times	3-4 Times					
. *	Housekeeping Tasks	Less Than Once Per Day	1-2 Times	3-4 Times					
. *	Housekeeping Tasks Sweeping Vacuuming Water flushing of floors	Less Than Once Per Day	1-2 Times	3-4 Times					
.3	Housekeeping Tasks Sweeping Vacuuming	Less Than Once Per Day  X  N/A	1-2 Times	3-4 Times					
.3	Housekeeping Tasks Sweeping Vacuuming Water flushing of floors	Less Than Once Per Day  X  N/A	1-2 Times	3-4 Times					
.4	Housekeeping Tasks Sweeping Vacuuming Water flushing of floors	Less Than Once Per Day  X  N/A	1-2 Times	3-4 Times					
	Housekeeping Tasks Sweeping Vacuuming Water flushing of floors	Less Than Once Per Day  X  N/A	1-2 Times	3-4 Times					

9.21	Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?
	Routine exposure N/A
	Yes
	No
	Emergency exposure
	Yes
	No
	If yes, where are copies of the plan maintained?
	Routine exposure:
	Emergency exposure:
9.22	Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.
	Yes
	No
	If yes, where are copies of the plan maintained?  Personnel department, tech. dept.  eng. dept. prod. dept.
	Has this plan been coordinated with state or local government response organizations' Circle the appropriate response.
	Yes)
	No
9.23	Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.
	Plant safety specialistN/A
	Insurance carrier
	OSHA consultant
	Other (specify)
·	
[_]	Mark (X) this box if you attach a continuation sheet.

9.24	appropriate response.
	Plant safety specialist 1
	Insurance carrier
	OSHA consultant 3
	Other (specify)
9.25	Who is responsible for the medical program at your facility? Circle the appropriate response.
	Plant physician 1
	Consulting physician
	Plant nurse 3
	Consulting nurse 4
	Other (specify) 5

#### SECTION 10 ENVIRONMENTAL RELEASE

#### General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

10.01 <u>CBI</u>	Where is your facility located? Circle all appropriate responses.
[_]	Industrial area
•	Urban area
	Residential area
	Agricultural area
	Rural area
_	Adjacent to a park or a recreational area
	Within 1 mile of a navigable waterway
•	Within 1 mile of a school, university, hospital, or nursing home facility
	Within 1 mile of a non-navigable waterway
	Other (specify)1

	Intituda		22 8 77	
	Latitude	•••••••		2 ' 19
	Longitude	•••••	118 • 13	3 <u>'</u> 06
	UTM coordinates Zone	UK. , North	ning <u>UK.</u> , Ea	astingUK.
10.03	the following information.		nity of your faci	lity, provide
	(N/A) Average annual precipitation			inches/ye
	Predominant wind direction	• • • • • • • • • • • • • • • • • • • •		-
10.04	Indicate the depth to groundwater	below your facility	'• (N/A)	
10.04	Indicate the depth to groundwater  Depth to groundwater	•	(-1//	meters
10.05	· -	indicate (Y/N/NA) a	all routine relea	uses of the
10.05 CBI	Depth to groundwater  For each on-site activity listed, listed substance to the environmen Y, N, and NA.)	indicate (Y/N/NA) a t. (Refer to the i	all routine releanstructions for	ases of the a definition
10.05 CBI	For each on-site activity listed, listed substance to the environmen Y, N, and NA.)  On-Site Activity	indicate (Y/N/NA) at. (Refer to the i	all routine releanstructions for rironmental Relea	ises of the a definition was a see
10.05 CBI	Depth to groundwater  For each on-site activity listed, listed substance to the environmen Y, N, and NA.)  On-Site Activity  Manufacturing	indicate (Y/N/NA) a t. (Refer to the i	all routine releanstructions for	ases of the a definition
10.05 CBI	For each on-site activity listed, listed substance to the environmen Y, N, and NA.)  On-Site Activity	indicate (Y/N/NA) at. (Refer to the i  Env Air  N/A  N/A	oll routine releanstructions for rironmental Releavater  N/A  N/A	ases of the a definition ase  Land  N/A  N/A
10.05 CBI	Depth to groundwater  For each on-site activity listed, listed substance to the environmen Y, N, and NA.)  On-Site Activity  Manufacturing	indicate (Y/N/NA) at. (Refer to the i  Env Air	all routine releanstructions for rironmental Relea	ases of the a definition ase  Land  N/A
10.05 CBI	Depth to groundwater  For each on-site activity listed, listed substance to the environmen Y, N, and NA.)  On-Site Activity  Manufacturing  Importing	indicate (Y/N/NA) at. (Refer to the i  Env Air  N/A  N/A	oll routine releanstructions for rironmental Releavater  N/A  N/A	ases of the a definition ase  Land  N/A  N/A
	Depth to groundwater  For each on-site activity listed, listed substance to the environmen Y, N, and NA.)  On-Site Activity  Manufacturing  Importing  Processing	indicate (Y/N/NA) at. (Refer to the i  Env Air  N/A  N/A  YES	all routine releanstructions for rironmental Releavater  N/A  N/A  NO	ases of the a definition ase  Land  N/A  N/A  N/O
10.05 CBI	Depth to groundwater  For each on-site activity listed, listed substance to the environmen Y, N, and NA.)  On-Site Activity  Manufacturing  Importing  Processing  Otherwise used	indicate (Y/N/NA) at. (Refer to the i  Env Air  N/A  N/A  YES  N/A	all routine releanstructions for rironmental Releavater  N/A  N/A  NO  N/A	ses of the a definition was because Land N/A N/A NO N/A

10.06	Provide the following information for the lister of precision for each item. (Refer to the instance example.)	ed substance and specif tructions for further e	y the level xplanation an	ıd
CBI		See		
$[\overline{X}]$	Quantity discharged to the air	South Coast Air Qualit	Y kg/yr ±	*
				-
•	Quantity discharged in wastewaters	N/A	kg/yr ±	. *
**	Quantity managed as other waste in on-site treatment, storage, or disposal units	200	kg/yr ± <u>30</u>	. %
	Quantity managed as other waste in off-site treatment, storage, or disposal units	N/A	kg/yr <u>+</u>	_ <b>x</b>

 $[\overline{\underline{\mathbb{X}}}]^{\frac{1}{2}}$  Mark (X) this box if you attach a continuation sheet.

10.06	Provide the following information for the liste of precision for each item. (Refer to the instan example.)	ed substance and spec tructions for further	ify the level explanation and
CBI		See	
[_]	Quantity discharged to the air	South Coast Air Qual "E.P.A. form R"	-
		E.F.A. IOIM K	kg/yr ±
F	Quantity discharged in wastewaters	N/A	_ kg/yr ± ;
• (1) • (1) • (2) • (3)	Quantity managed as other waste in on-site treatment, storage, or disposal units	200	kg/yr ± <u>30</u>
	Quantity managed as other waste in off-site treatment, storage, or disposal units	N/A	_ kg/yr <u>+</u> ;
			,
	<del>-</del> -		
•			
. "			

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FORM S

### **SUMMARY OF FEES DUE FOR 1988**

Company Name	MD USE ONLY							
Allen Foam Corpor	ration	REVIEWED BY:	ENTERED:					
A. TOTAL FEES DUE THE LEV ENTER AMOUNT FROM L	VIS AIR QUALITY MINE M OF FORM C	IANAGEMENT ACT OF 1976.	\$10,	685.00				
B. EMISSION FEES DUE UND ENTER AMOUNT FROM LI	ER THE AIR TOXIC	S "HOT SPOTS" PROGRAM.		238.65				
		GR	AND TOTAL \$10,	923.65				
PLEASE MAKE CHECKS PAYABLE TO S.C.A.Q.M.D. IN THE AMOUNT OF THE GRAND TOTAL AND MAIL TOGETHER WITH ONE COMPLETED COPY OF FORM 8-1, B-2, ETC. THROUGH FORM C, FORM X AND FORM S AND MAIL TO THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, FILE NO. 21621, LOS ANGELES, CA 90074-1621.  FORMS BEARING A POSTMARK LATER THAN MARCH 3, 1989 MAY BE SUBJECT TO PENALTIES PRESCRIBED BY THE DISTRICT'S RULES AND REGULATIONS.								
TION FOR CALENDAR YEAR 1988	i <b>.</b>	A SUBMITTED ARE A TRUE RECORD OF						
NAME Catarino S. Gonzalez  TYPE OR PRINT  TITLE Plant Engineer  Date Fibruary 20,1989 Phone No. (213) 636-9151  PREPARER, IF OTHER THAN ABOVE:								
NAME			_ Phone No. ( )					

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FORM B-1: EMISSIONS FROM BURNING OF FUELS--GENERAL DO NOT USE FOR I.C. ENGINES OR TURBINES

COMPANY NAME: Allen Foam Corporation I.D. No. 059323-A.E.

(Copy the Company Name and I.D. No. as it appears on Form C)

INSTRUCTIONS: Please complete the table below according to the following steps:

annual usage for each type of fuel used

1. Enter the annual usage for each type of fuel used in calendar year in millions of cubic feet or thousands of gallons.

2. Calculate emissions for each pollutant by multiplying the annual usage by the emission factors provided.

If you use an alternate emission factor, cross out the emission factor provided and enter the alternate one in the space to the right. A copy of the data which substantiates the numerical value of the alternate emission factor must be provided when you submit this form.

3. Sum up total emissions for each pollutant and transfer the amount to Form C. Line A.

(An example of completing this form for a typical company is illustrated on the back of this form.)

	<del></del>				•				
	1		EMISSIONS - LBS/Y						
FUEL	ANNUAL USAGE	URGANIC GASES (1)	METHANE	NITROGEN OXIDES	SULFUR OXIDES	CARBON MONOXIDE	PART. MATTER		
Natural Gas		7.0*		213*	0.83	4.1*	17.5*		
I .	10 Million cu. ft)	70	- <b>9</b> -	2130.0	8.3	41	175		
LPG Propane		0.26	0.28	12.8	4.6*	3.2.*	.28		
Butane	(1000 Gals)	.26	.28	12.8	4.6	3.2	.28		
					-				
		<u>,</u>							
Diesel Oil Light Dist.		2.7		75*	14*	0.6*	3.6		
(0.1% 5)	(1000 Gals)	-0-	-0-	-0-	-0-	-0-	-0-		
Fuel Oil		2.7		75*	32.3	0.6	4.9		
(0.25% S)	(1000 Gals)	-0-	-0-	-0-	-0-	-0-	-0-		
Fuel Oil		2.7*		75	77.6	0.6	7.1		
(0.50% S)	(1000 Gals)	-0-	-0-	-0-	-0-	0-	-0-		
TOTAL EMISSIONS, LBS/YR		70.26	.28	2,142.8	12.90	44.2	175.28		

<sup>\*</sup> Emission Factors in 1bs per million cu. ft.

<sup>\*</sup> Emission Factors in 1bs per thousand gallons. (1) See note at top of reverse side.

values by documented and certified current source tests and uses an analytical procedure approved by the SCAQMD.

EXAMPLE: Company "A" burned 160 million cubic feet of natural gas. 200 thousand gallons of butane, and 680 thousand gallons of 0.5% sulfur fuel oil in calendar year.

Emission calculations for natural gas:

Organic Gases = 160 million cu. ft./yr x 7.0 lbs/million cu.ft. = 1,120 lbs/yr Nitrogen Oxide = 160 million cu. ft./yr x 213 lbs/million cu.ft. = 34,080 lbs/yr Sulfur Oxide = 160 million cu. ft./yr x 0.83 lbs/million cu.ft. = 133 lbs/yr Carbon Monoxide = 160 million cu. ft./yr x 4.1 lbs/million cu.ft. = 656 lbs/yr Part. Matter = 160 million cu. ft./yr x 17.5 lbs/million cu.ft. = 2,800 lbs/yr Similar calculations performed for butane and fuel oil will yield the values tabulated in the following form:

			EMISSIONS - LBS/YR							
REL	ANNUAL USAGE	ORGANIC GASES	METHANE	NITROGEN OXIDES		CARBON JONOXIDE	PART. MATTER			
Natural Cas	· 160	7.0‡		213*	0.83	4.1	17.5.			
	Million cu. ft.	1120		34.080.	133	656.	2,800			
₹G ₹Topane	200	0.26	0.28*	12.8	4.6	3.2	.28			
Butane	(1000 Gals)	52	56 ·	2560	920	640	56			
	' -			_						
Diesel Oil Light Dist.	Na	2.7*		<i>7</i> 5 *	14	0.6	3.6			
(0.1% S)	(1000 Gals)									
Fuel Oil		2.7*		75	32.3	0.6	4.9			
(0.25% S)	(1000 Gals)									
Fuel Oil	680	2.74		<i>7</i> 5 *	77.6	0.6	7.1			
(0.50% S)	(1000 Gals)	1836		51,000	52,768	408	4,828			
TOTAL EMISSIONS, LBS/YR		3008	56	87,640	53,821	:1,704	7,684			

<sup>\*</sup> Thission Factor in lbs per million cu. ft.

Amission Factor in 1bs per thousand gallons.

### FOR CALENDAR YEAR 1988 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FORM B-2: EMISSIONS FROM FUEL BURNING - INTERNAL COMBUSTION ENGINES AND TURBINES

COMPANY NAME: Allen Foam Corporation ID No. 059323-A.E.

(Copy the Company Name and I.D. No. as it appears on Form C)

INSTRUCTIONS: Please complete the table below according to the following

steps:

- 1. Enter type of engine (Internal Combustion or Turbine).
- For each type of engine enter on separate lines the annual usage of each type of fuel used in calendar year. Enter annual usage in millions of cubic feet or thousands of gallons. Use more than one sheet if necessary.
- 3. Fill in the appropriate emission factors from the emission factor table on back of this form. If you use an alternate emission factor, enter the alternate one. A copy of the data which substantiates the numerical value of an alternate emission factor must be provided when you submit this form.
- 4. Calculate emissions for each contaminant by multiplying the annual usage by the emission factors.
- 5. Sum up total emissions and transfer the amount to Form C, Line B. If more than one sheet is required, add the "Total Emissions" of each contaminant from each sheet and enter the grand total for each contaminant on Form C, Line B.

(An example of completing this form for a typical company is illustrated on the back of this form.)

the back	of this	jorm.)								
TYPE OF	TYPE OF	USAGE ≠		EMISSIONS - LBS/YR						
ENGINE		FOR YEAR	ORGANIC GASES (1)	METHANE (1)	NITROGEN OXIDES	SULFUR OXIDES	CARBON MONOXIDE	PAKT.		
ALL VEHICLES USED IN THE PLANT			*		*	*	*	*		
Sweeper	Propane	1,000	83 83	<u>-0-</u> -0-	139 139	.35	129 129	5		
			+ -0-		*	-0-	-0-	* -o-		
			*		*	*	*	•]		
			-0-	-0-	<b>-</b> 0-	-0-	-0-	-0-		
				-0-	-0-	-0-	-0-	-0-		
			*		*	•	•			
- <del></del>			-0-	-0-	-0-	-0-	-0-	-0-		
			*		•		*	•		
<u> </u>			-0-	-0-	-0-	-0-	-0-	-0-		
		}			-0-	-0-	-0-	-0-		
TOTAL EMISS	IONS, LBS	/YR	83	-0-	139	.35	129	5		

<sup>\*</sup>Enter millions of cubic feet or thousands of gallons.

<sup>•</sup> Enter appropriate emission factor from table on back of this form.

TYPE OF	TYPE OF		EMISSION FACTOR							
ENGINE	FUEL	ORGANIC (C) SHEAD	METHANE	<del></del>			PART.			
	Natural Gas	280*	1120*	3400*	0.6*	430*	MATTER 0			
Internal Combustion	LPG (C3 or C4)	83‡	-	139‡	0.35‡	129‡	. 5†			
Propane = C <sub>3</sub> H <sub>8</sub>	Casoline	206‡	-	102*	5.3*	3910*	6.5*			
Butane = C <sub>4</sub> H <sub>10</sub>	Distillate Oil or Diesel Oil	37.5*	_	469*	31.2*	102*	33.5*			
Turbine	Natural Gas	42 *	-	413*	0.6.*	115*	14*			
	Distillate Oil or Diesel Oil	5.57*	-	67.8 <sup>‡</sup>	31.2*	15.4*	5‡			

- \* Emission Factors in lbs per million cu. ft.
- \* Emission Factors in lbs per thousand gallons.

EXAMPLE: ABC Oil Company operates two field compressors each driven by a diesel engine using distillate oil and a standby electrical generator driven by a natural gas-fired turbine. Each diesel engine used 129,000 gallons and the turbine burned 70,000,000 cu. ft. of gas in calendar year. 30,000 gallons propane used by forklifts.

Emission calculations for diesel engines:

Organic Gases 258 thous. gals/yr x 37.5 lbs/thous. gal. = 9.675 lbs. Nitrogen Oxides 258 thous. gals/yr x 469 lbs/thous. gal. =121,002 lbs. Sulfur Oxides 258 thous. gals/yr x 31.2 lbs/thous. gal. = 8.500 lbs. Carbon Monoxide 258 thous. gals/yr x 102 lbs/thous. gal. = 26.316 lbs. Part. Matter 258 thous. gals/yr x 33.5 lbs/thous. gal. = 8.643 lbs.

Similar calculations performed for the natural gas-fired turbine will yield the values tabulated in the following form:

TYPE OF	Type		EMISSIONS - LBS/YR							
ENGINE	TYPE FUEL	ANNUAL USAGE	ORGANIC	METHANE	NITROGEN. OXIDES		CARBON	PART.		
Internal Combustion	Diesel		37.5		469	31. 2	102	33.5		
	niezei	258	9675 .		121,002	8,050	26,316	8,643		
Turbine	Natura1		1.2		413	.6	115	14		
	Gas	70	2940		28,910	42	8,050	980		
Forklifts	Propane	30	83		139	_35	129	5		
	Topate		2490		4170	10.5	3870	150		
OTAL EMISSI	ONS,LBS/YR		15,105		154,082	8102.5	38236	9773		

\* Enter millions of cubic feet or thousands of gallons.

\* Enter appropriate emission factor.

(1) Applicant may use other emission factors providing that he establishes these values by documented and certified monthly source tests and uses an analytical procedure approved by the SCAQM

### FOR CALENDAR YEAR 1988 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

#### FORM B-3: EMISSIONS FROM THE USE OF ORGANICS

COMPANY NAME: Allen Foam Corporation I.D. No. 059323-A.E. (Copy the company and I.D. No. as it appears on Form C)

INSTRUCTIONS: Please complete the table below according to the following steps:

- 1. List all organics used in your business in calendar year. All types used must be listed (use photocopies of this sheet if necessary).
- 2. Enter the annual usage for calendar year 1988 of each organic in gallons per year except for fibreglass products. For fibreglass products, enter pounds per year. Fill in the appropriate emission factor from the emission factor table below or
- from the table on the back of this form. If your organic material is not listed, or if the VOC contents differ from those in the list, you may provide your own emission factors, provided you submit data to substantiate these factors.
- 4. Calculate emissions for each organic by multiplying the annual usage by the emission factor.
- 5. Sum up total organic emissions and transfer the amount to Form C, Line C. If more than one sheet is required, add the 'Total Emissions' from each sheet and enter the grand total on Form C, Line C.

(Examples of completing this form for typical companies are illustrated on the attached sheets.)

TYPE OF ORGANIC	USAGE FOR YEAR	EMISSION FACTOR	SPECIFIC ORGANICS LBS/YEAR(*)	EMISSIONS OF ORGANIC GASES, LBS/YEAR
Methlene Chloride	110	11.2	1,232.00	-0-
ISO Propol. Alch.	165	6.6	-0-	1,089.00
Petroleum Distill	• <sup>*</sup> 55	7.0	-0-	385.00
Adhesives (60%)	-264	· 5.5	-0-	1,452.00
Paste Wax	442	6.2	-0-	2,740.40
Spray Wax (96%)	11,880	6.3	-0-	74,844.00
Acetone	55	6.6	-0-	363.00
Freon	220	13.0	2,860.00	-0-
	·			
TOTAL [	13,191.[gallons]	0-	4,092.00	80,873.40

#### EMISSION FACTOR TABLE FOR COMMON ORGANICS

	Coatings	Lbs. of Orgs/Gal.	Printing Industry	Lbs.	of Orgs/Gal
•	Adhesives Enamel Lacquer Primers	5.5 4.5 5.5 5.0	Litho Inks & Ltr Press Inks Flexo Inks Water Soluble Inks Gravure Inks		3.0 5.5 0.0 5.5
	Sealer Solvents	5.7 7.0	Degreasers and Dry Cleaners	;	
	Stains (spirit 6.0) o Stains (semitranspare Varnish Water Based	paque 4.8 ent) 6.7 4.5 3.0	*111 Trichloroethane Perchloroethylene *Methylene Chloride Petroleum (Stoddard, 140°F)	<del>-</del> :	11.1 13.5 11.2 6.5
	(*) Spacifi	a amonica Inank	1 - 1 - 1		

(\*) Specific organics (marked with \*) are totaled separately -see other side -

### EMISSION FACTOR TABLE FOR COMMON FORM B-3: ORGANICS

Solvent	Lbs of Orgs/Gal	Solvent	Lbs of Orgs/Gal		
Acetone	6.6	Var Sol #1	6.5		
Benzene	7.3	West Chem: Solvent #3			
Butyl Cellosolve	7.5	Xylene	7.2		
Cellosolve Acetate	8.1				
Chevron 1100	6.7	Materials	Lbs of Orgs/Gal		
Chevron 1200	6.5	Charis Black Asphalt	5.0		
Diamine	8.4	Contact Cement	5.5		
Dimethyl Formamide	7.9	Epoxy Paint or Primer			
Dowanol EE	7.7	Fuel Oil	3.7		
Dowanol EB	7.5	Glaze 🦮	5.5		
Electro Solvent	11.5	Lining, Cans	5.0		
Epoxy Thinner	7.0	Lining, Drum	4.5		
Ethyl Alcohol (Commerc	ial) 6.3	Paint Remover	5.2		
*Freon 113 *Freon 12	12.5 13.9	Polyurethanes	5.2		
Furfuryl Alcohol	9.4	Quench Oil	7.5		
Hexylene Glycol	7.7	Shellac	5.5		
L_xane	5.5	Toner	6.0		
Isopropyl Alcohol	6.6	Treating Oil	7.5		
Kerosine	7.0	Urethane	5.0 :		
Lactol Spirits	6.3	Wash Coat	5.5		
Methanol	6.6	Wax	6.2		
MEK	6.7		•		
Mineral Spirits	6.5	<b>7</b> .1	Ib ad 0/		
Naphtha	6.3	Fiberglass Products	Lb of Orgs/ Lb of Material		
Pemsol	6.4				
Rho-Chem 231	13.3	Epoxy (2 Component)	0.05		
Rho-Chem 47	12.6	Fibreglass Resin	0,05		
Rho-Thane	11.0	Gel Cont	0.10		
Rho-Tri	12.5	Plasticizer	0.05		
Shell 360	6.4	Resins	0.05		
Toluene	7.2	(1) Specific Organics are	defined as		
Turco Cleaning Solvent	7.3	III Trichloroethane, M	Methylene Chloride		
V & P Naphtha	6.3	Freon 11, Freon 12 and	Freon 113.		

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FORM C

### SUMMARY OF EMISSIONS AND DETERMINATION OF FEES FOR PLANT PREMISES FOR CALENDAR YEAR 1988

ALLEN FOAM CORP. 175 E. MANVILLE ST.	FOR SCA	QMD USE ONLY
COMPTON ID NUMBER: 059323-AE	REVIEWED BY:	ENTERED:

INSTRUCTION: TO COMPLETE THIS FORM, REFER TO THE INSTRUCTIONS PROVIDED ON "GENERAL INSTRUCTION" SHEET

DEADLINE FOR SUBMITTAL MARCH 45 1989			TOT	AL EMISSION	IS		
·	ORGANIC GASES	METHANE	SPECIFIC ORGANICS	NITROGEN OXIDES	SULFUR OXIDES	CARBON MONOXIDE	PARTICULATE MATTER
A. FORM B-1, Fuels — General	70.26	.28	-0-	2,142.80	12.90	44.20	175.28
B. FORM B-2, Fuels — I.C. Engines	83.00	-0-	-0-	139.00	.35	129.00	5.00
C. FORM B-3, Organics	80,873.40	-0-	4,092.00	-0-	-0-	-0-	-0-
D. FORM 8-4, Process	-0-	-0-	-0-	-0-	-0-	-0-	-0-
E. FORM 8-5, Refinery	-0-	-0-	-0-	-0-	-0-	-0-	-0-
F. FORM B-6, Power Plant	-0-	-0-	-0-	-0-	-0-	-0-	-0-
G. Total Emissions lbs./yr. (Sum of lines A thru F)	81,026.66	.28	4.092.00	2,281.80	1325	173.20	180.28
H. Total Emissions, tons/yr. (G ÷ 2000), & transfer to Form X (Round off to the nearest ton)	·40 -·	1	2	1	1	1	1
I. Emissions exempted, tons	5		5	5	5	100	5
<li>J. Emissions subject to fee, tons (H-I) (Enter Zero if negative) and transfer to Form C-1, Line AA)</li>	35		-0-	-0-	-0-	-0-	-0-
K. Fees for each pollutant (from Form C-1, Line DD), \$	10,685.00	188 160 188	-0 <b>-</b>	-0-	-0-	-0-	-0-
M. TOTAL EMISSIONS FEE, Sum of Line	K.\$ 10,685.	0,0				•	
PLEASE SEND FEE PAYMENT AIR QUALITY MANAGEMENT DIS MAKE CHECKS TO S.C.A.Q.M.D., THE ABOVE EMISSIONS ARE BASI 16 HOU	TRICT, <u>FILE NO. 2</u> , AND MAIL TO B	<u>21621, LOS AI</u> E POSTMARI	NGELES, CAS KED NOT LAT OPERATING (	<u>90074-1621</u> . TO A' TER THAN <b>MARC</b>	VOID LATE P. 1 <b>H 3, 1989.</b>	AYMENT PEI	NALTIES,
I SWEAR UNDER PENALTY OF PERJURY FOR CALENDAR YEAR 1988.	THAT THE DATA SU					AND/OR CON	
NAME Catarino S. Gon	zalez		Signature	Harino S.	Honzel	lez	
TITLE Plant Engineer	OR FRIEN	Date <u> </u>	huern zo	<u> 1987</u> Phone No.	. (213)	() 636 <b>-</b> 915]	L
PREPARER, IF OTHER THAN ABOVE:			-			`	

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FORM C-1

#### FEE CALCULATIONS WORKSHEET FOR CALENDAR YEAR 1988

Company Name: Allen Foam Corporation I.D. #: 059323-A.E.

		ORGANIC GASES	METHANE	SPECIFIC ORGANICS	NITROGEN OXIDES	SULFUR OXIDES	CARBON MONOXIDE	PARTICULATE MATTER
AA.	EMISSIONS SUBJECT TO FEES (TONS) FROM LINE J ON FORM C	3,5	EXEMPT	TOTAL # TONS:	TOTAL # TONS:	TOTAL # TONS:	TOTAL # TONS:	TOTAL # TONS:
<b>BB.</b>	1-20 TONS ONLY	1-20 TONS: 20 x \$289.00/ton =\$ 5780.0	EXEMPT Ø	1-20 TONS: x \$52.00/ton	1-20 TONS: x \$167.00/ton	1-20 TONS: × \$200.00/ton	FLAT RATE PER TON: TOTAL TONS:  x \$2.52/ton	1-20 TONS: x \$221.00/ton
cc.	21 TONS & OVER ONLY	# TONS OVER 20: 15 x \$327.00/ton = \$ 4,905.0	<b>Ø</b>	# TONS OVER 20: x \$58.00/ton  =\$0-	# TONS OVER 20: x \$188.00/ton =\$O	# TONS OVER 20: x \$226.00/ton =\$O	x \$2.52/ton	# TONS OVER 20: x \$250.00/ton
DD.	FEE TOTALS: ADD \$ AMOUNTS OF LINES BB + CC =	\$ <u>10,685.</u> 0	ехем <b>р</b> т 0. <b>Ø</b>	s <u>-0-</u>	\$	\$ <u>-0-</u>	\$	s

INSTRUCTIONS: FILL OUT THIS FORM AFTER FORM "C" IS COMPLETE THROUGH LINE J. HEADINGS ON THE CHART ABOVE CORRESPOND TO THE HEADINGS ON FORM "C".

- 1. LINE AA: Transfer the totals from Line J on Form "C", and enter them under the correct headings above.
- 2. LINE BB: Multiply your first 1-20 tons by the dollar amount in the appropriate box and enter the total.
- 3. LINE CC: Multiply the number of tons greater than 20 by the dollar amount in the appropriate box and enter the total.
- 4. FOR CARBON MONOXIDE ONLY: Multiply the total emission tons by the flat rate of \$2.52 and enter the total on LINE DD.
- 5. LINE DD: Add the total DOLLAR amounts from LINES BB AND CC.
- 6. TRANSFER THE ENTRIES FROM LINE DD TO LINE K OF FORM C.

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FORM X

#### AIR TOXICS "HOT SPOTS" FOR YEAR 1988

Emission fees mandated under Sections 90700-90706 of Title 17 of the California Code of Regulations concerning Air Toxics "Ho Spots" Fee Regulation.

FOR SCAQMD USE ONLY

Company Name Allen Foam Corporation LD: No. 059323-A.E.

sixty (60) days of receipt of the fee assessment notice.

City, State	ress 175 E. Manville Street Compton, CÁ		REVIEWED BY:		ENTERED:
Zip 9022		FO	2 50 42 500 4	.,	
INSTRUCTION IN THE PROPERTY OF	ON: TO COMPLETE THIS FORM, REFER TO THE INSTRUCTIO	NS FO	R COMP. FORM	Χ.	
TOTAL	Organic Gases Entry From Line H of Form C	1	40	Γ	
ORGANIC	2. Methane Entry From Line H of Form C		I	]	
GASES.	3. Specific Organics Entry From Line H of Form C	3	2		
	4. Add lines 1, 2 and 3	4	43		
	5.	5	25	]	
	6. Subtract Line 5 From Line 4	6	18		
	7. If Line 6 is Zero or Greater, Enter Value on Line 4, if Line 6 is Negative,	Enter Ze	ero	7	43
		100			
NITROGEN	8. Nitrogen Oxides Entry From Line H of Form C		1	-	
OXIDES	9.	9	25		
	10. Subtract Line 9 From Line 8	10	-24		
	11. If Line 10 is Zero or Greater, Enter Value on Line 8; if Line 10 is Negative	e, Enter	Zero	11	0-
<b>የጀ</b> ጀልናት ሦስ ህን የነገር ነው <b>አ</b> ንድና	A Tabaka And Anggarang Anna and Anggarang Same A Companyan Same Same And A Same Anna Control C			Γ	
		Time.			
SULFUR	12. Sulfur Oxides Entry From Line H of Form C		<u> </u>		
OXIDES	13.	13	25		
	14. Subtract Line 13 From Line 12			_	
	15. If Line 14 is Zero or Greater, Enter Value on Line 12; If Line 14 is Negati	ve, Enter	Zero	15	-0-
PART.	16. Particulate Matter Entry From Line H of Form C	16	1	_	
MATTER	17.	17	25		
	18. Subtract Line 17 From Line 16		-24		
	19. If Line 18 is Zero or Greater, Enter Value on Line 16; if Line 18 is Negati			19	-0-
EMISSIONS	20. Add Lines 7, 11, 15 & 19. This is Total Emissions Subject to Fees			20	43
& FEES	21. FEES DUE (Multiply Line 20 x 5.55)		• • • • • • • • • • • • • • • • • • • •	21	\$ 238_65
				!	
	NDER PENALTY OF PERJURY THAT THE DATA SUBMITTED ARE A TRUE RECO		•		•
	Calendar year 1988. Under Penalties of Perjury, I declare that I I TS and Statements, and to the best of My Knowledge and Belie				
NAME Car	tarino S. Gonzalez Signature	www	<u>05. Elaze</u>	<u> تا عر</u>	<del>Y</del>
TITLE Pla	ant Engineer Date 7.6mmy 20,1	1939	Phone No. ( <u>213</u> )	_6	36-9151
PREPARER, I	IF OTHER THAN ABOVE:				
NAME	_				•
TITLE		1	Phone No. ()		
	90704 of Title 17 of the California Code of Regulations, penalties may be in				

1	WASTE MANIFEST	مممما	PA ID No.	Doc	Manifest cument No.	- F	Page 1	Informa	ation in	the shaded
	3. Generator's Name and Mailing Address	I DONE	B 0 4°1 9	8 10 17	19 [2] 3		of Tate Manife			by Federal
	ALLEN FOAM CORP.	, -					87	607	192	
	175 E.MANVILLE ST. COM 4. Generator's Phone (213) 538-41	B. State Generator's ID								
	5. Transporter 1 Company Name	C. St	C. State Transporter's ID							
	NORWALK DRIM 7. Transporter 2 Company Name		N DI 9  3  1 US EPA II	141212	11/4/0		ansporter's		212 /	921-5171
ı	NORWALK DRUM	8.				1	ite Transpo	orter's ID	805	
	Designated Facility Name and Site Address	IC 10.	US EPA I	Number	<u> 14                                   </u>		insporter's ite Facility		213/	921-5171
	CASMALIA RESOURCES STU RD. CASMALIA,CA.93429	. •	e containing			H. Fac	A n o	ام اد ا	7 4	<u> </u>
ı			<u> 최 의 의 김 이</u>		11215	<u> </u>	905/9		149	
	11. US DOT Description (Including Proper Shi	pping Name, Hazard Ci	ass, and ID Number	)	12. Conta	Type	13. To Qua	otal antity	14, Unit Wt/Vol	l. Waste l
G	waste poison B NOS UN 2	073 "RQ"			3		17	100		State 352
N E	b.	ab packed)	101	In	T LX	DM	1-1-		P	EPA/Other U223
R	nazardous waste solid-No	OS ORM E NA	91235		(8)					State 352
T •0	ca, reg. waste (mineral s	spirits)	/> CI	123	16	D jii	<sub> </sub> 1 <sub> </sub> 3	0.0	p	EPA/Other ca.only
₽,	c.		DI CI	-00		_	12 10	10 10	F	State
		(-	I NIGO	4 1988 1988						EPA/Other
l	d.		Aller I	ON. CAL	F. (10)					State
ı			/ // com.	ο <sub>1</sub> .						5D4 (0)
ı	J. Additional Descriptions for Materials Listed	Ab	127		(1/2/)		11	ııl		EPA/Other
	gal.drum. sawdust used a mads.and E.H.permit.				İ	c.	03		đ.	03
	B.old outdated wax, solid	ified with a			İ	c.	03		d.	03
	B.old outdated wax, solid  15. Special Handling Instructions and Additional  388 attached mads	ified with a		id & d	İ	C.			d.	03
	B.old outdated wax, solid  15. Special Handling Instructions and Additional See attached mads  16. GENERATOR'S CERTIFICATION: I here name and are classified, packed, marke international and national government regions.	ified with a slower of the control o	ves & gogg.	id & d:	ry.	accura or trans	tely descr	ibed abo	ove by	proper shippi ng to applica
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• •	Form Approved OMB Na.: 2070-0093
Important: Type or print; read instructions before completing form.	Approval Expires: 01/91
U.S. Environmental Protection Ace	
SEPA TOXIC CHEMICAL RELEASE INVENTORY R	EPORTING FORM EPA FORM
Section 313. Title III of The Superfund Amendments and Re	eauthorization Act of 1986
	(This space for EPA use only.)
PART I. FACILITY IDENTIFICATION INFORMATION	
1. Does this report contain trade secret information?  1.2 is Yes (Answer 1.2)  No (De sot answer 1.2)	this a sanitzed copy? 1.3 Reporting Year
<b>S</b> ************************************	Y- X- 1988 ·
2. CERTIFICATION (Read and sign after completing all sections.)  I hereby certify that I have reviewed the attached documents and that, to the best and complete and that the amounts and values in this report are accurate based or	of my broudedes and before it
of this report.	n reasonable estimates using data available to the preparers
Name and official title of owner/operator or senior management official  WILSON CUDD	
Signature 1:10	
_ Whon ( )	3-1-89
J. FACILITY IDENTIFICATION	1 07
ALLEN FORM CORPORATION	
Street Address	This report contains information for: (chuck ene)
3.1 GIT STREET STREET	An entire covered facility,
COMPTON LOS ANGEL	ES 3.2 b. Part of a covered facility,
CALIFORNIA 9,0,2,2,4,	
3.3 ALAN STEWART	Telephone Nurrear (Include area code). (213) 638 - 4171
3.4 MILSON CUDD.	Telephone Number (include area gode) *-
a. SIC Code b. a.	(213) 638 - 4171
Latritude Largertude	
1.6 3.315,211.9 1.1 811.310.6	Where to send completed forms:
.7 Dun-4 Bracetreet Number(s) b.	U.S. Environmental Protestion Agency
.8 aC , A, D, O, O, 8, 3, O, 4, 1, 9, 8 b.	Washington, DC 20024-0298 - 44. Attns Toxis Charminal Release Inventory
.9 a ( b.	
Name of Recovery Stream(s) or Water Scor(s)	
· N/A	
10 6.	
11 N/A:	
PARENT COMPANY INFORMATION	
Name of Parent Company	
THE WOODBRIDGE GROUP	
1.61-1/16151-19181812	
Form 9350-1 (1-A8)	

Umportant: Type or print; read instructions before completing form.)	Page 2 of 5
EPA FORM R  PART II. OFF-SITE LOCATIONS TO WHICH TOXIC  CHEMICALS ARE TRANSFERRED IN WASTES	(This space for EPA use gruy.)
I. PUBLICLY OWNED TREATMENT WORKS (POTW)	
Facinty Name	
N/A Strent Address	
CHY . COUNTY	
S1810 Z.o	
2. OTHER OFF-SITE LOCATIONS - Number these locations sequentially on this	and any additional page of this form
Other off-site location	- Communication of the communi
EPA IDENTIFICATION NUMBER (ACRA O. No.) (C. A. D.O. 0.8, 3.0,417.98)	
Facility Name	
OMEGA RECOVERY SERVICES	
12504 EAST WHITTIER BOULEVARD	
ity	
WHITTIER LOS-HNGELES :	
CALIFORNIA 9,0,6,0,2,-1,1,1	
- CTIETT OR 10   17   17   17   17   17   17   17	***
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Ireet Address	and the second s
County	
Zie :	
You No	
Other off-site location	· · · · · · · · · · · · · · · · · · ·
PA Montification Number (RCRA O. Mo.) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	••
revi Address	
County	
26 · ·	
's location under control of recenting facility or parent company?	
Yes No	
Charts of additional pages of Part 1 are attached.	

EPA Form \$350-1(1-88)

(Important: Type or print: read ins	tructions	before completing fo	irm.)		Page 3 of 5
PART III. CHE	EPA FC MICAL SF	PECIFIC INFORMATI	ON	,	This space for EPA use eng.)
I. CHEMICAL IDENTITY	-				
	·				
The other (Frontier & Ben	eric name i	n 1.4 below. Attach su	bstantiation form to	this submission.)	
Chamical or Chamical Calanas, Name	<u>ାଥା-[</u>	Use leading zeros If	CAS number does n	ot III space provide	d.)
2,6 TOLUENE I	211500	CYANATE			
1.4 Generic Chemical Name (Complete only t	1 1.1 Is check	ed.)			
MIXTURE COMPONENT IDENT	TY (De se	Complete this service			
2. General Chemical Name Provided by Supp	ner (Limit the	name is a maximum of 70	oneractors (e.g., num	Section 1.)	Profitation).
J. ACTIVITIES AND USES OF THE CH	EMICAL A	THE FACILITY (C	heck all that apply.)		
3.1 Manufacture: a. Produc	:8	b. Himport		For on-site	ing
d. For sai	tion	e- As a bypri	oduct	f. As an impu	rity
3.2 Process: a. As a re	actant	b. As a formi	dation	As an artici	
d. Repack	aging only	42.4	•	'	
3.3 Otherwise Used: a. As a ch		b. As a manu	facturing aid (	4000000	
				Ancillary or	other use
4. MAXIMUM AMOUNT OF THE CHE	MICAL ON	SITE AT ANY TIME	DURING THE CAL	ENDAR YEAR	···
04 (enter code)		<u> </u>	•		
S. RELEASES OF THE CHEMICAL TO 1	HE ENVIR	ONMENT			
	-	A. Total Re		B. Basis of	<del>                                     </del>
You may report releases of less than 1,000 bs. by checking ranges under A.1.		A.1 Reporting Ranges	A.2 . Enter	Estimate (enter code)	:
5.1 Fugitive or non-point air emissions	5.1a	0 1-499 500-0 χ	25tandte	5.1b O	
5.2 Stack or point air emissions	5.2a	X		5.2b M	.,=
5.3 Discharges to water 5.3.1	5.3.14	:	N/A	5.3.1b	C. % From Stormwater 5.3.1e
(Enter letter code from Part I Section 3. 10 for streams(s).)  5.3.2	5.3.2a			5.3.20	5.3.2e
5.3.3 🔲	5.3.3a			5.3.30	5.3.3e
.4 Underground injection	5.4a ·		N/A	5.4b	
S.S. t (order sees)	5.5.1a		N/A.	5.5.1b	
5.5.2 [	5.5.2a			5.5.2b	
5.5.3 [emer coto)	5.5.3a			5.5.3b	1
(Cheek if additional information is provided on i	Part N-Suppl	emental information.)		<u>.                                     </u>	·
PA Form 9350-1(1-88)					

			R. Part III (		. Page 4 of 5
6. TRANSFERS OF THE CHEM		TE TO OFF-S			
You may report transfers of tess than 1,000 los, by checking ranges under A, I,		(fbs/yr)		8. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code
	Reportie	A.1 ng Ranges 98 sno-998	A.2 Enter Estimate		
6.1 Discharge to POTW			N/A	6.1b	
6.2 Other eff-site location   [Enter book number from Part 8, Section 2.]	×	· ·	300	6.2b	6.2c M 50
5.3 Other off-site location remore block number from Part 8. Section 2.)			•	6.35	6.3c
6.4 Other off-site location (Emer block number from Part 8, Section 2.)				6.4b	6.4c
(Check if additional information	on is provided o	on Part IV-Sup	plemental inform	lation)	
7. WASTE TREATMENT METHO	DS AND EFF	CIENCY			
A. General B. Treatmen Wastestream (enter code) [enter co		C. Range of influent Concentration (enter code)	D. Sequent Treatme (check i applicab	ent? Efficiency	F. Based on Operating Cata?
7.1a Mt 7.1b N/A	7.	.1e N/A		A	7.1f N/A
7.2a 7.2b	7.	2c	7.2d	7 7	7.21
7.3a 7.3b	7.	3e 📗	7.3d	7.30	, 7.3f
7.4a 7.4b	7.	40	7.4d	7.40	7.46
7.5a 7.5b	7.	50 <u> </u>	7.5d	7.50	, 7.5t
7.6a 7.6b	7.	6c ·	7.84	7.5e ,	7.81
7.7a 7.7b	7.	7e 📗	7.74	7.70	7.71
7.8a 7.8b	7.	Se 📗	7.8d	7.80	7.8f
7.9a 7.9b	7.5	9e 🗌	7.9d	7.9e x	7.91
7.10a . 7.10b	7.1	10e	7.10d	7.10e ×	7.10f
7.11a 7.11b	7.1	11a	7.11d	7.110 %	7.111
.12a 7.12b	7.1	2c	7.12d	7.12e w	7.121
.13a 7.13b	7.1	30 📗	7.13d	7.130 %	7.131
.14a 7.14b	7.1	40 [	7.14d	7.140 %	7.141
(Check If additional informa	tion is provided	on Part IV-Su	ppiemental infor	mation.)	•
OPTIONAL INFORMATION ON     (Indicate actions taken to reduce the terms and an explanation of what in			ng released from	n the facility. See the ins	tructions for ended
A. Type of B. Ou	CHINACON ID EX	clude.) hernical in the v			
modification printed p	or to treatment	/Gisposal		J	Reason for action (enter code)
re	rrent borting or (lbs/yr)		hange Percent		· · ·
		1	*		· ·
Form 9350-1(1-88)					

. (Important: Type or print; rea	d instruction.	s before completin	ng form.)	•	Page 5 of S
		No sauce for EPA use erry, }			
PART	,	• •			
Use this section if you need Number or letter this information	ed additional sp sequentially fro	ace for answers to im prior sections (e.	questions in Parts I	and III.	
	•			. 3.33).	• ·
ADDITIONAL INFORMATION OF	N FACULTY I				
ADDITIONAL INFORMATION OF	N PACILITY	PENTIFICATION (P	art I - Section 3)		
3.5 Dun & Bradstreet Number(s)		₹	:	• •	
3.7	<u>, ,                                  </u>	1-1   1   1-1	· , , ,   · ¯		
3.8 EPA Identification Number(s) ACRA	· <u>L</u>				4 4
3.9 NPDES Permit Number(s)			11111	<del></del>	
Name of Receiving Stream(s) or W	ater Scoy(s)		111		
3.10		<b></b>			
ADDITIONAL INFORMATION ON	RELEASES	O LAND / Same "	<b>6</b>		
Releases to Land	-	A. Total F	elease		
		. (Ibs	/91		B. Basis of Control Estimate
•		Reporting Range	S Enter		(enter code)
5.5 (enter code)	.   5.5a			5.5	. h
i.5 (enter code)	. 5.5a				
.5   (enter eads)	5.5			5.5	
				5.5	_•
ADDITIONAL INFORMATION ON	OFF-SITE TR	A.Total Trans	Section 6)		•
•		(lbs/yr	) · · .	8. Basis of Estimate	C. Type of Treatment/ Disposal (enter code)
•		A.1 Reporting Ranges 0 1-499 500-9	A.2 Enter se Estimate	(enter code)	
Displaye to POTW	6a	1. 1.	·	6. 6	
Other eff-site legation (Enter bleek number	-		-		
Other stiests treates	58			66	6a :
(Enter beest number trem Part E. Section 2.)	6a				60.
DDITIONAL INFORMATION ON	WASTE TREAT	TMENT (Part III _ 4	Section 7		
Contra Wastestream B. Tre	atment	C. Range of	D. Sequential	. E. Treatment	F. Based on
(ent	thod ler code)	Influent Concentration (enter code)	1 Treatment?	Efficiency Estimate	Operating Data?
7. 6	1 1 1 1 1			_ •	Yes No
		70	7d	70 %	
_*		70	7e	70 %	7.1.1.
<u>-•                                    </u>		70	76	7e %	7
_8		70	7a 🔲	7. <u> </u>	7
		70 🗀	7d	7	7_
•					

EPA Form 9350-111-881

Form Approved OMS No.: 2070-0093 01/91 Approval Expires:\_\_\_ (Important: Type or print; read instructions before completing form.) Page 1 of 5 U.S. Environmental Protection Agency SEPA TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM **EPA FORM** Section 313, Title III of The Superfund Amendments and Reauthorization Act of 1986 PART L FACILITY IDENTIFICATION INFORMATION 1988 2. CERTIFICATION (Read and sign after completing all sections.) I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report. WILSON CUDD. J. FACILITY IDENTIFICATION ALLEN. FOAM CORPORATION EAST MANVILLE ST COMPTON ک٥. ANGELES CALIFORNIA 9,0,2,2,4 ALAN STEWART (2/3) 638-4171 WIL SON 3.6 Where to send completed forms: 3.7 3.8 3.9 3.10 Well Cade (LIC) Identificati PARENT COMPANY INFORMATION 4.1 WOODBRIDGE GROUP 4.2 1161.1/16151 19181812

EPA Form 9350-1 (1-88)

EPA Form 9350-1(1-84)

matien le provided en Part IV-Suggemental Information.)

EPA Form 9350-111-881

D										
6. TRANSEE	EPA FORM R. Part III (Continued)  6. TRANSPERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS									
	•		al Transfers		8. Basis of Estimate	C. Type of Treatment/				
14-366 ASS (190	1,000 lot. by checking A.I.	A,1	(fbs/yr)	A.2	(enter code)	Disposal (enter code)				
		Reporting F	langes sno-eee	Enter Estimate						
6.1 Discrerge	ie POTW			N/A	6,16					
6.2 Other off-	et number									
from Part	4. Section 5:1	<u> </u>	X ·	500	6.2b	6.20 M 5 0				
	elle location ch number 2. Section 2.7			· . · ·	6.3b	6.3e				
Enter bigg	site location cit number 4. Section 2.1				6.45	6.4c				
[Check if	additional information	ls provided on F	art IV-Supp	iemental Informat	ion)					
7. WASTE TRE	ATMENT METHOD	S AND EFFICIE	NCY							
A. General Wastestream			ange of	C. Sequentia		F. Based on				
(enter code)	[enter code		oncentration	(check if	Estimate	Operating Cata?				
7.1a N/A	7.15 N/A	7.1a	NYA.	7.1d N/	7.10 NA ' w					
7.2a	7.25	7.20		7.2d	7.20	7.2f				
7.3a 📗	7.30	7.3a		7.3d · ··	7.30 %	7.31				
7.42	7.46	7.40		7.46	7.40 %	7.46				
7.5a 🗌	7.So	7.5e		7.5d	7.5a %	7.56				
7.5a .	7.65	7.6e	· 🗆	7.8d	7.6e %	7.61				
7.74	7.75	7.7a	. 🔲	7.7d	7.70	7.71				
7.8a · 🔲	7.8b	7.5c		7.8d	7.80 %	7.81				
7.94 .	7.95	7.9c		7.9d ·	7.90	7.91				
7.104 .	7.109	7.10e		7.10d	7.10e %	7.10f				
7.114 '	7.115	7.11g		7.11d ·	7.11e %	7.111				
7.12a	7.125	7.12e		7.12d	7.120 %	7.121				
.13a	7.136	7.13a		7.13d	7.130	7.13f				
.14a 📗 :	7.146	7.14e		7.144	7.140 %	7.141				
(Check	if additional information	on is provided on	Part IV-Su	opiemental Inform	ation.)	·				
. OPTIONAL IN	NFORMATION ON V	VACTE LAILURAN	ZATION		•					
(indicate actions	S taken to reduce the	amount of the c	hamical hair	ng released from	the facility. See the inst	Ductions for cortes				
Rems and an ex	planation of what info	rmation to includ	e.)			Annual let Annual				

(Indicate actions taken to reduce the amount of the chamical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of modification [enter code]

B. Quantity of the chamical in the wastestream [C. Index D. Reason for action (enter code)]

Current prior to treatment/disposal [Change change]

Year [25s/yr] [35s/yr]

See the instructions for coded in the facility. See the instructions for coded items and an explanation of what information to include.)

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\* = //

LTRIS SEASON INC. S.D.A. .....

### PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Parts I and III. Number or letter this information sequentially from prior sections (e.g., D.E. F. or 5.54, 5.55).

					11	
	-					
ADDITIONAL INFORMATION O	N FACILITY I	DENTIFICATION	V (Part I - Se	ection 3)		•
3.5 SC Code	-				<b>建设</b>	
3.7 Out & Bradstreet Number(S)	, <u> </u>	1 1 - 1 1 1	1-1 1 1	- 456		
3.8 EPA Identification Number(s) RCRA	LD. No.;				* 5/8°	
3.9 NPDES Permit Number(s)		-,,,,				
3.10 Name of Receiving Stream(s) or W	aler Body(s)		<u></u>		•	
ADDITIONAL INFORMATION ON	DEI SACSO	70.1.1.10			•	
Releases to Land	NELEASES		t III – Section tal Release			
MANAGERS TO LANG			(Ds/yr)	Many To A		B. Basis of
· ·		A.1 Reporting Ru 0 1→00	inges 500-999	A.2 Enter Estimate		(enter code)
5.5 (enter code)	. S.Sa			•	5.	56
5.5(enter gode)	5.5			•	. · · · · .	s
5.5 (order ecde)	5.5a	.			S.:	<b>Б</b>
			1		1	
ADDITIONAL INFORMATION ON	0.55 0.55					
ADDITIONAL INFORMATION ON	OFF-SITE TR	A Total I	III - Section	8) .		
ADDITIONAL INFORMATION ON	OFF-SITE TR	A.Total 1	iii - Section Fransfers		8. Sasie of Estimate	G. Type of Treatment/ Disposal (enter code)
ADDITIONAL INFORMATION ON	OFF-SITE TR	A.Total T (lb: A.1 Reporting Rang	ransfers s/yr)	A.2 Enter	B. Basic of	G. Type of Treatment
— Discharge to POTW	6a	A.Total T (lb: A.1 Reporting Rang	ransfers s/yr)	A.2 Enter	8. Basic of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
		A.Total T (lb: A.1 Reporting Rang	ransfers s/yr)	A.2 Enter	8. Basic of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
Charles to POTW Other off-orte legation (Enter blook surrous	6a	A.Total T (lb: A.1 Reporting Rang	ransfers s/yr)	A.2 Enter Estimate	S. Basic of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
Citerarys to POTW Other eff-one legation (Enter blook number from Part II, Section 2.) Other eff-one location (Enter blook number from Part II, Section 2.)	6a 6a 6a	A.Total 1 (Ib: A.1 Reporting Rang 9 1-400 S	ransfers styr)	A.2 Enter Estimate	8. Basic of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
Checharge to POTW  Other eff-eith location (Enter blook number Nom Part II, Section 2.)  Other eff-eith location (Enter block number from Part II, Section 2.)  ADDITIONAL INFORMATION ON V General Wastestream  8. Tre	6a  6a  6a  VASTE TREA	A.Total 1 (Ib: A.1 Reporting Rang 9 1-400 S	ransfers styr)	A.2 Enter Estimate	8. Basic of Estimate (enter code)  6b   6b	C. Type of Treatment/ Disposal (enter code)  8c
Other off-one issation (Enter blook number from Part I, Section 2.)  Other off-one location (Emer blook number from Part I, Section 2.)  DOITIONAL INFORMATION ON V General Wastestream (enter code)  8. Tre-	6a 6a VASTE TREA	A.Total 1 (lb)  Reporting Rang 0 1-400 5	ransfers s/yr} ee co-ee l - Section 7 ation (cr	A.2 Enter Estimate	S. Basic of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
Other off-one issation (Enter blook number from Part I, Section 2.)  Other off-one location (Emer blook number from Part I, Section 2.)  DOITIONAL INFORMATION ON V General Wastestream (enter code)  8. Tre-	6a 6a 6a vaste trea	A.Total 1 (lb)  Reporting Rang 0 1-eee s  TMENT (Part II	ransfers s/yr} ee co-ee l - Section 7 ation (cr	A.2 Enter Estimate	8. Basis of Estimate (enter code)  8b  6b  E. Treatment Efficiency Estimate	C. Type of Treatment/ Disposal (enter code)  8c  F. Based on Operating Data? Yes No
Checkurge to PCTW  Other eff-eite location (Enter block number Worn Part I, Section 2.)  Other eff-eite location (Enter block number from Part I, Section 2.)  ADDITIONAL INFORMATION ON V General Wastestream (enter gode)  8. Tre Met (enter gode)	6a 6a 6a vaste trea	A.Total 1 (Ib)  A.T  Reporting Rang 0 1-400 5  TMENT (Part II  C. Range of influent Concentrational Concentrations	ransfers s/yr}  ee 00-ees  1 - Section 7  ation (or de)  7d	A.2 Enter Estimate  puential tatment? eck if sicable)	6. Basis of Estimate (enter code)  6b  6b  E. Treatment Efficiency Estimate	C. Type of Treatment/ Disposal (enter code)  6c.  F. Based on Operating Data? You No
Checkurge to POTW  Other eff-eite legation (Enter blook number Worn Part I, Section 2.)  Other eff-eite legation (Enter blook number from Part I, Section 2.)  ADDITIONAL INFORMATION ON V General Wastestream (enter gode)  8. Tre Met (enter gode)  7 b	6a 6a 6a vaste trea	A.Total 1 (lb: A.Tital 7 (lb: A.Tital 7 (lb: A.Tital 7 (lb: A.Tital 7 (lb: A.Tital 7 (lb: A.Tota	ransfers s/yr)  ee 00-ees  1 - Section 7 D. Section 7 (or about 7d 7d	A.2 Enter Estimate  puential tatment? eck if sicable)	6. Basis of Estimate (enter code)  6b  6b  E. Treatment Efficiency Estimate	6c
Checharge to POTW  Other eff-eite legation (Enter blook number (Mon Part I, Section 2.)  Other eff-eite legation (Enter blook number from Part I, Section 2.)  ADDITIONAL INFORMATION ON V General Wastestream (enter gode)  7b  7b	6a 6a 6a vaste trea	A.Total 1 (lb: A.T Reporting Rang 0 1-400 5  TMENT (Part II C. Range of influent Concentr: (enter co 7c 7c 7c	ransfers s/yr}  ee co-ee  1 - Section 7  ation de)  7d  7d  7d	A.2 Enter Estimate  puential patrient? eck if sicable)  7	6. Basis of Estimate (enter code)  6b  6b  E. Treatment Efficiency Estimate	C. Type of Treatment/ Disposal (enter code)  6c
Checharge to POTW  Other efficient legation (Enter blook number Non Part 8, Section 2.)  Other efficient legation (Enter blook number from Part 8, Section 2.)  ADDITIONAL INFORMATION ON V General Wastestream (enter code)  7b  7b  4  7b	6a 6a 6a vaste trea	A.Total 1 (Ibr	Tansfers   1	A.2 Enter Estimate  puential patrnent? eck if sidable)  7	8. Basis of Estimate (enter code)  6b   6b   E. Treatment Efficiency Estimate	6c.

EPA Form 9350-1(1-68)

٠.		rorm A	oproved OMB No.: 2070-0093
•	(Important: Type or prints and instrumines before as wells!		Approval Expires: 01/91
· 1	(Important: Type or print; read instructions before completing form.)		Page 1 of 5
	U.S. Environmental Protection Agency		
	SEPA TOXIC CHEMICAL RELEASE INVENTORY REPORT	TING FORM	EPA FORM
1	in the second se		
- 1	Section 313. Title III of The Superfued Amendment and David		R .
١	Section 313. Title III of The Superfund Amendments and Reauthor	ization Act of	1986
1			(This space for EPA use only.)
.		·	(11.00 spaces in EPA use aniy.)
- 1	PART I. FACILITY IDENTIFICATION INFORMATION		
- 1			
- 1		•	
- 1			
ř			
		lured oppy?	1.3 Reporting Year
- 1	Yes (Answer 1.2) No (De sot answer 1.2)	<b>区 ~</b>	1988 .
_ F	CEPTIFICATION (P		7780 :
• ] ;	2. CERTIFICATION (Read and sign after completing all sections.)		
	hereby certify that I have reviewed the attached documents and that, to the best of my kr and complete and that the amounts and values in this report are accurate based on reasons	nowledge and beli	icf, the submitted information is total
	a mis report.	ible estimates us	ng data available to the preparers
1	tame and official title of owner/operator or serior management afficials	<del> </del>	
	WILSON CUDD	•	•
·/-	consture : //		
- 1	This I all	Cate signed	
Ł	Willson Cuth	3-1-9	25
3.	FACILITY IDENTIFICATION .		7
T	Facility or Establishment Name		
	ALLEN FORM CORPORATION		
1	Street Accress	This repor	t contains information ter: (check and
1	. 175 E. MANVILLE ST		
3.	City	a. 🔀	Art entire ecores facility,
	County	3.2	Part of a country trains
1	I TO THE TENT		
1	CALIFORNIA 9.0.1.7.4		
<u> </u>			
١.,	Technical Contact	Toleghane Name	(Ingluge area gode).
-	ALAN STEWART	(2/3) 638.	4171.
13.4	Public Contact	Teleprone Number	(include area epps)
	WILSON COUD	(213) 638.	4171
. 3.5	3,0,8,6	(113) 030	1.7.7
<u> </u>	13,0,8,6		
	- Latitude Longitude	_	
3.6		Wher	e to send completed forms:
<u> </u>	13,315,211,911,1,811,310,6		o to some completed forms:
3.7	Dury & Bradetreet Number(s) b.		Environmental Protection Agency
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	P.O.	Sex 70206
3.8	EPA Identification Number (RCRA LD, No.)	Althi	Toxie Charried Release Inventory
<u> </u>	["C; A, D, O, O, 8, 3, O, 4, 1, 9, 8]",	ı	
3.9	NPOES Permit Number(s) b.	┥ .	
	$\Gamma \mathcal{M} A_1$ , , , , , , $\Gamma$		
	Name of Receiving Stream(s) or Water Books		
l ' '.	* N/A	:	
l			
3.10		٠.	• • •
·	£.	· ·	• • •
٠.			
<u> </u>			<u>.</u>
3.11	Underground Injection Well Code (UIC) Identification No.		
<u></u>	N/A.		• • • •
4. 6	PARENT COMPANY INFORMATION		
	Name of Parent Company		
4.1	THE WOODBRIDGE GROUP		
4.2	1161-1/16151-19181512		
584	1 101-1110101-11101014		
SFA	Form 9350-1 (1-88)		

Comportant: Type or print; read instructions before completing form.)	Gan 3 at 6
EPA FORM R  PART II. OFF-SITE LOCATIONS TO WHICH TOXIC  CHEMICALS ARE TRANSFERRED IN WASTES	(The space for (Pr. use only.)
1. PUBLICLY OWNED TREATMENT WORKS (POTW)	
Fachty Name	
Street Address	
City	
State	
2. OTHER OFF-SITE LOCATIONS - Number these locations sequentially or	this and any additional page of this form you use
Other off-site location  EPA inercification Number (RCRA ID. No.) C1A1D1010813101411918  Facility Name	
STREET ASSESSED TO THE PROPERTY SERVICES	
12504 EAST WHITTIER BOULEVARD COMP LOS ANGELES	
STATE CALIFORNIA 9,0,6,0,21-1 1-17	
Cither elf-eite location	
EPA demolection number (RCRA 10, Nb.)	and the second control of the community of the control of the cont
Facility Flame	
Street Address  Gity   County	
County County Zie	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Yes No	
Other off-site location	
Solidy Name	
treet Address	
County .	
26   26	•
14 location under control of reporting facility or parent company?	
Crests if addressed pages of Part 8 are attached.	. /

EPA Form 9350-1(1-88)

4542 - Federal Register /	Vol. 53.	No. 30 / Tue	sday, F	ebruary 16. 19	988 / Rules a	nd Regulations
(Importunt: Type or print; read in	siructions	befare complet	ine form	.)		Page 3 of 5
PART III. CHE		PECIFIC INFOR	MATION	·	,	True season for EPA use enty.)
I. CHEMICAL IDENTITY						
1.1 Trade Secret (Provide a ge	neric name i	s 1.4 below. Att	ach substa	Intiation form to th	ule emberiesies à	
1.2 CAS . 000584-	84-19		<del></del>			
Chamical or Chamical Category Name				S number does no	III space provide	<b>4.)</b> • 2000 Teath
General Chamical Name (Complete only	11 1.1 is great	CYANATI	<u> </u>			
MIXTURE COMPONENT IDENT  2. General Chamical Name Provided by Sup	ITY (Do no	t complete this se	ction if yo	u have completed	Section 1.)	
				Patters (e.g., numbe	re, letters, spaces,	profession)).
J. ACTIVITIES AND USES OF THE C	HEMICAL .	AT THE FACILIT	Y (Check	all that apply.)		
3.1 Manufacture: a. Produ		b. 🔲 lmp	ort		For on-site	ina
d. For sa		•. ☐ A# s	byprodu	ot f.	As an impu	
3.2 Process: . 2. As a re	eactant		formulationent .	on e.	As an article	
d. Repac	taging only	•	~		component	
3.3 Otherwise Used: a. As a cl	remical	b.   As a	manufact	isting aid		
				•	Ancillary or	other use
4. MAXIMUM AMOUNT OF THE CHE	MICAL ON	SITE AT ANY	TIME DU	RING THE CALE	NDAR YEAR	
0 5  (enter code)				• •		
S. RELEASES OF THE CHEMICAL TO	THE ENVI					
You may report releases of less than			(Ds/yr)		B. Basis of Estimate	•
1.000 bs. by checking ranges under A.1.		Reporting F	SOO-998	A.2 Enter Estimate	(enter code)	··· • · · · · ·
5.1 Fugitive or non-point air emission	5.14	X			5.1b	
5.2 Stack or point air emissions	5.2a	X			5.2b M	
5.3 Discharges to water 5.3.1	5.3.1a			N/A	5.3.1b	C. % From Stormwater 5.3.1e
(Enter letter code from Part I Section 3. 10 for streams(s).) 5.3.2	5.3.2a			- / //	5.3.25	
/ 5.3.3 <u> </u>	5.3.3a		-		5.3.35	5.3.2e 5.3.3e
5.4 Underground Injection	5.4a ·			N/A	5.45	5.J.Je
5.5 Releases to land			<del>-  </del>	14/11	****	

N/A

5.5.16

5.5.2b [ 5.5.3b [

5.5.1a

5.5.22

EPA Form 9350-1/1-08)

•	CD. 50014	R. Part III (Coi		
6. TRANSFERS OF THE CHEMI			ntinued)	Page 4 of \$
You may report transfer of 1935 then 1,000 lot. To charming	C. Type of Treatment/ Disposal (enter code)			
ranges under A. I.	A.1 Reporting Ranges 0 1	A.2 Enter Estimate	(enter code)	and (sing coof)
6.1 Discharge to POTW		N/A	6.1b	•
6.2 (Enter book number from Part 4, Section 2.)	·	1,200	6.2b	6.20 M 50
6.3 Omer effective location (Errier block number from Part E, Section 2.)		•	6.35	6.3c
6.4 Other off-site location (Enter block number tram Part 4, Section 2,)			6.45	6.4e
(Check if additional information	n'le provided on Part IV-Supp	plemental informatio	on)	
7. WASTE TREATMENT METHOD				
Wastestream (enter code) 8. Treatment Method (enter cod	influent	D. Sequential Treatment (check if applicable)		F. Based on Operating Cate?
7.1a NA 7.1b NA	7.1a N/A.	7.1d N/A	7.10 N/A %	7.18 W/A
7.2a 7.2b	7.26	7.24	7.20 %	7.21
7.3a 7.3b	7.3c	7.3d · · ·	7.36 %	7.3f .
7.4a 7.4b	7.4c	7.4d	7.40 %	7.44
7.5a 7.5b	7.5e	7.5d	7.5e %	7.51
7.6a . 7.6b	7.5c ·	7.8a	7.5e ' %	7.6f
7.78 7.79	7.7e _	7.7d	7.70 . %	7.71
7.8a 7.8b	7.8a	7.8d	7.80 %	7.8f
7.95	7.9a	7.9d	7.90 %	7.9f
7.10a . 7.10b	7.10e	7.10d	7.10e %	7.10f
.114 7.116	7.11e	7.114	7.110	7.11f
.12a 7.12b	7.12e,	7.12d	7.120 %	7.121
.13a 7.13b	7.13e	7.13d	7.130 %	7.13f
.14a 7.14b	7.14e ·	7.144	7.140 %	7,141
(Check if additional information	ion is provided on Part IV-Su	pplemental informa	ition.)	•
. OPTIONAL INFORMATION ON V	WASTE MINIMIZATION			
(indicate actions taken to reduce the items and an explanation of what info	amount of the chamical basis		he facility. See the instr	uctions for coded
A. Type of B. Quar	ntity of the chemical in the w r to treatment/disposal	astestream	C. Index D. I	Reason for action (enter code)

Or percent change

Prior year (Ros/yr)

Current reporting year (Ds/yr)

EPA Form 9350-1(1-88)

. (Impresant: Type or print; read instructions before completing form.)

Page 5 of S

EPA FORM K		( time the arry to any.)
PART IV. SUPPLEMENTAL INFORMATION	7	
You need additional space for answers to greatless in Roman	- 1	

Use this section if you nee Number or letter this information	ed additional sp sequentially in	pace fo	r answers to q r sections (e.g	-	1 and 1 54, 5,5	si.	• •
			· · · · · · · · · · · · · · · · · · ·			_	• •
ADDITIONAL INFORMATION O	N FACILITY II	OFMI	CATION (B.				
3.5 - SIC Code		DEIVIII	FICATION (PE	rt I - Section 3	)	<del></del>	
					٠,		State of the state
3.7 Out 4 Bradstreet Number(s)						•	
<u> </u>		1-1	1 1 1 - 1		•	•	
3.8 EPA Identification Number(s) ACRA	LD. No.)	_			1		
NPOES Permit Number(s)			111	1 1 1 1			•
3.9	Ļ	<del>.</del>					
Name of Receiving Stream(s) or W	ater Body(s)						•
3.10	· · · · ·	_		_	- 1	•	•
ADDITIONAL INFORMATION ON	RELEASES	OLA	VO / Rem III -	Continue Con		•	
Releases to Land	-		A. Total Re	Hease ( 14-		<del></del>	
	_		- (lbs/)	(F)	**** *** <b>*</b>	•	B. Basic of
			A.1	Α.		1 .	- Estimate (enter code)
		0	porting Ranges	-ooo Estin	or Late	1	
5.5 (enter gade)	. S.S a					<del>                                     </del>	
	1				•	5.5	<b>└</b>
5.5 (enter code)	. 5.5		ے ۔			, •	
	1		- 1	• • •		5.5	
(anter eade)	5.5a	•		3	•	5.5	
	<u></u>						<u> </u>
ADDITIONAL INFORMATION ON	OFF-SITE TR	ANSF	R ( Part III -	Section 6)			
			A. Total Transi			. Sasis of	C. Type of Treatment/
•		·	(Ibs/yr)	•	<u>·</u> 」	Estimate	Disposal (enter code)
••	1 1	Répor	A.1 ting Ranges	A.2 Enter		(enter code)	
··	<del>  </del>	•	1-09 500-09			. •	
Disentage to POTW	6a	· -  °		·	6.	, []·	
Other off-site teastice	<del>                                     </del>	<del>-</del>  -				_° □	• • • •
Other off-site leastion (Enter blook number from Part S, Section 2.)	6e	1	j				
Other attacks inserted					6.	_ <u>,                                    </u>	60
(Enter blook number from Part & Section 2.)	6a	- 1	1.			• □	6. 6.
				1 .	10.		·
DOMONAL INFORMATION ON	WASTE TREA	TMEN	T (Part III - S	ection 7)	•		
General Wastestream B. Tre	atment hod	C.	Range of	D. Sequential	. E.	. Treatment	F. Based on
	er code)		influent Concentration	Treatment (check if	7	- Efficiency Estimate	• Operating .
		—	(enter code)	applicable)		Caratistra	Data? Yes No
_9		,				•	
		+	_•	7a	7	_• . •	6 71
_a		7.	🗆	7d	7	_	7.21
		+			<del>-   ':=</del>	•	6 7. <u>- 1 </u>
_4		7	_• 🔲	7d	7	_• ,	. ,
		1		-			
_8		7	_•	7å	7	_• · •	71
_4		1 -					

EPA Form 9350-1(1-88)

CBI	Process type	<b></b>	nd complete it separately for each process type.  (N/A)					
[_]	Process Stream ID Code	Media Affected <sup>1</sup>	Average Amount of Listed Substance Released	Number of Batches/Year	Days of Operation/ Year			
			· · · · · · · · · · · · · · · · · · ·					
	A = Air B = Land C = Groundwa D = POTW E = Navigabl	ter e waterway gable waterway	esignate the media affected:					
	<sup>2</sup> Specify the the followin A = kg/day B = kg/batch	g codes to desig	f listed substance released nate the units used to measu	to the environm re the release:	ent and use			

10.10	Emission Characteristics Characterize the		
	Emission Characteristics Characterize the emissions for each Point Source ID Code 10.09 by completing the following table.	identified	in question
CRT	table.		•

( <u>*</u> )	Point Source ID Code	Physical State	Average Emissions (kg/day)	Frequency <sup>2</sup> (days/yr)	Duration <sup>3</sup> (min/day)	Average Emission Factor	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
	<u>7.18</u>		See	220	920	See	See	See	See
	7.10		_ Form	220	920	Form	Form	Form	Form
	7.22		S	220	920	s	S	S	S
	7.24		S	220	920	S	S	S	S
				/					
			/						
	<del></del>								
		/							

Use the following codes to designate physical state at the point of release:
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify)

<sup>&</sup>lt;sup>2</sup>Frequency of emission at any level of emission

<sup>&</sup>lt;sup>3</sup>Duration of emission at any level of emission

 $<sup>^4</sup>$ Average Emission Factor — Provide estimated ( $\pm$  25 percent) emission factor (kg of emission per kg of production of listed substance)

Mark

8

this

10.10	Emission Characteristics Characterize the emissions for each Point Source ID Code	dentified	in question
••••	10.09 by completing the following table.	Marrim m	Maximum

EI I	Point Source ID Code	Hysical State	Average Emissions (kg/day)	Frequency <sup>2</sup> (days/yr)	Duration <sup>3</sup> (min/day)	Average Emission Factor	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Emission Rate Duration (min/event)
	<u>7.18</u>		See	220	920	See	See	See	See
	7.10		Form	220	920	Form	Form	Form	Form
	7.22	V	S	220	920	S	S	s	S
	7.24	v.	S	,220	920	S	S	S	S
	7,2.							;	<u> </u>
						•			
								.:	
	<u> </u>							· .	
								:	,
	<del></del>				***				

Use the following codes to designate physical state at the point of release:

G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify)

<sup>&</sup>lt;sup>2</sup>Frequency of emission at any level of emission

<sup>&</sup>lt;sup>3</sup>Duration of emission at any level of emission

Average Emission Factor — Provide estimated (± 25 percent) emission factor (kg of emission per kg of production of listed substance)

10.08	Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question							
CBI	and complete it separ	ately for each process type.	. notocopy this question					
[-]	Process type	Manufacture of polyurethane foam cushio	ns.					
·		Table 1 por for delicate Today Outside						
ı	Stream ID Code	Control Technology	Percent Efficiency					
	"NO CON	TROL TECHNOLOGY"						
		• Company of the date of the company						
		· · · · · · · · · · · · · · · · · · ·						
			*					
[_]	Mark (X) this box if ye	ou attach a continuation sheet.	•					

	for each pro Process type	cess type.	cture of polyurethane foam cushions.
P -	oint Source ID Code		Description of Emission Point Source
_	7.18		Up blast roof vent in bulk storage building
_	7.10		Up blast roof vent at compound platform
_	7.22	•	Exhaust fan in pour room
_	7.24		Exhaust fan in cure ovens
٠ -			
_			
_		,	
_			· *
_			
_		<del>*</del> -	
	-		
			•

[\_\_\_\_ Mark (X) this box if you attach a continuation sheet.

Point Source ID Code  7.18 Up blast roof vent in bulk storage bui 7.10 Up blast roof vent at compound platfor Exhaust fan in pour room Exhaust fan in cure ovens	ining the listed s block or of each point fugitive emissio ete it separatel
7.10 Up blast roof vent at compound platfor  7.22 Exhaust fan in pour room	t Source
7.22 Exhaust fan in pour room	ilding
	rm
7.24 Exhaust fan in cure ovens	
	A
	•
•	pqq

 $[\overline{\underline{x}}]$  Mark (X) this box if you attach a continuation sheet.

10.12 <u>CBI</u>	If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.								
[ <u>]</u> ]	Point source ID code	N/A							
	Size Range (microns)	Mass Fraction (% ± % precision)							
	< 1								
	≥ 1 to < 10								
	≥ 10 to < 30								
	≥ 30 to < 50								
	≥ 50 to < 100								
	≥ 100 to < 500								
	≥ 500								
		Total = 100%							
		•							

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

CBI				•				
[_]	Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	(C.F.M.) Emission Exit Velocity  **TATELET** **TATELET* **TATELET** **TATELET** **TATELET** **TATELET* **TATELET** **TATELET** **TATELET** **TATELET** **TATELET** **TATELET** **TATELET** **TATELET** **TATELET** **TATELET**	Building Height(m) <sup>1</sup>	Building Vidth(m)	Vent Type <sup>3</sup>
	7.18	N/A	N/A	21	34,350	5.49	7.62	
	7.10	N/A	N/A	56	34,350	10.67	76.20	V
	7.22	7.62	.76	52	28,300	10.67	76.20	V
	7.24	9.14	.76	112	15,000	10.67	76.20	<u> </u>
			-					
÷								
				-				
į.								
								***

<sup>&</sup>lt;sup>1</sup>Height of attached or adjacent building

H = Horizontal

V = Vertical

*feet X .3048 = m	eters
[ ] Mark (X) this box if you attach a continuation sheet.	

<sup>&</sup>lt;sup>2</sup>Width of attached or adjacent building

<sup>&</sup>lt;sup>3</sup>Use the following codes to designate vent type:

0.13	<sup>2</sup> If double mechanical seals are operated with the barrier (B) fluid at a pressure related than the pump stuffing box pressure and/or equipped with a sensor (S) that greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively <sup>3</sup> Conditions existing in the valve during normal operation <sup>4</sup> Report all pressure relief devices in service, including those equipped with control devices <sup>5</sup> Lines closed during normal operation that would be used during maintenance operations									
10.14 <u>CBI</u> [_]	Pressure Relief Devices with pressure relief devices ided devices in service are contenter "None" under column of the service and the service are contenter of the services are relief Devices are relief D	rolled. If a press.	te the following indicate which properties device  c.  Control Device ruptured disc	d. Estimated Control Efficiency  100%						
	Refer to the table in que heading entitled "Number Substance" (e.g., <5%, 5)  The EPA assigns a control with rupture discs under efficiency of 98 percent conditions	10%, 11-25%, etc.)	nercent for equip	ment leaks controlled						

PART	C	FUGITIVE	EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

Process type .... Manufacture of polyurethane foam cushions.

	Number of Components in Service by Weight Percent of Listed Substance in Process Stream								
Equipment Type	Less than 5%	5-10%	11-25%	26-75%	76-99%	Greater than 99%			
Pump seals <sup>1</sup>		75	,						
Packed	N/A	N/A	N/A	1	N/A	N/A			
Mechanical	N/A	N/A	N/A	N/A	N/A	N/A			
Double mechanical <sup>2</sup>	N/A	N/A	N/A	1	N/A	N/A			
Compressor seals <sup>1</sup>	N/A	N/A	N/A	N/A	N/A	N/A			
Flanges	N/A	N/A	N/A	N/A	12	N/A			
Valves									
Gas <sup>3</sup>	N/A_	N/A	N/A	N/A	N/A	N/A			
Liquid	N/A	N/A	N/A	N/A	N/A	N/A			
Pressure relief devices (Gas or vapor only)	N/A	N/A	N/A	N/A	3	N/A			
Sample connections									
Gas	N/A	N/A	N/A	N/A	N/A	N/A			
Liquid	N/A	N/A	N/A	N/A	5	N/A			
Open-ended lines <sup>5</sup> (e.g., purge, vent)									
Gas	N/A_	N/A	N/A	N/A	3	N/A			
Liquid	N/A	N/A	_N/A		4	N/A			

<sup>&</sup>lt;sup>1</sup>List the number of pump and compressor seals, rather than the number of pumps or compressors

#### 10.13 continued on next page

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

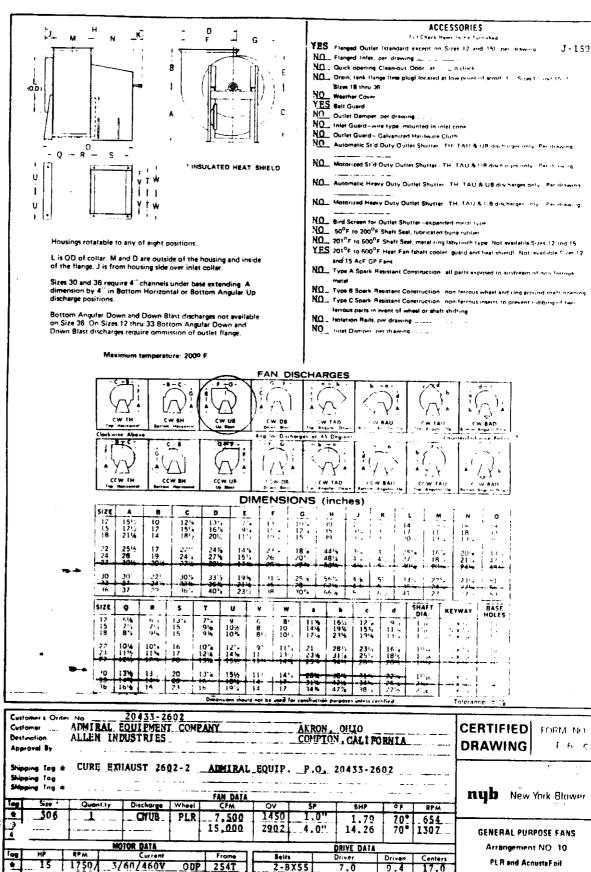
- 10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.
- Process type .... Manufacture of polyurethane foam cushions.

	Number	of Compo of Liste	nents in S d Substan	Service by	y Weight : cess Stre	Percent
Equipment Type	Less than 5%	5-10%	11-25%	26-75%	76-99%	Greater than 99%
Pump seals <sup>1</sup>						
Packed	N/A	N/A	N/A	1	N/A	N/A
Mechanical	N/A	N/A	N/A	N/A	N/A	N/A
Double mechanical <sup>2</sup>	N/A	N/A	N/A	1	N/A	· N/A
Compressor seals <sup>1</sup>	NXA	N/A	N/A	N/A	N/A	N/A
Flanges	N/A	N/A	N/A	N/A	12	N/A
Valves						
Gas <sup>3</sup>	N/A_	N/A	N/A	N/A	N/A	N/A
Liquid	N/A	NΛΑ	N/A	N/A	N/A	N/A
Pressure relief devices (Gas or vapor only)	N/A	N/A	N/A	N/A	3	N/A
Sample connections			\			
Gas	N/A_	N/A	W/A	N/A	N/A	N/A
Liquid	N/A	N/A	NXA	N/A	5	N/A
Open-ended lines <sup>5</sup> (e.g., purge, vent)						
Gas	N/A	_N/A_	_N/A	_N/A_	3	N/A
Liquid	N/A	N/A	N/A	N/A		
1						

List the number of pump and compressor seals, rather than the number of pumps or compressors

#### 10.13 continued on next page

<sup>[</sup>X] Mark (X) this box if you attach a continuation sheet.



177

TWO SHEED STRILE WINDING VAR. TOROUTE

rd integer indicates type of wheel R PLR 7-Al

REVISED 3-8-72 CEPTIFIED PAL/mg

MOTOR & MOUNTING BY NYB

3-4-72

PLR and AcoustaFoil Sizes 12 thru 36

Class II

J-1595-5 A

17.0

		3				M				
A			С	D		SIDES		-	DIA HOLES	
L	SWSI	DWDI			SWSI	DWDI		SWSI	DWDI	
15¾ 18¾ 23	11% 13% 16%	271/4	Y. Y.	13% 16% 20%	9% 11% 13%	24%	3 5 5	3 3 3	  5	%6 %6
27 % 30 % 32 4	19 % 21 ½ 23 %	32% 36% 39%	44	24% 27% 304	16% 18% 20#	30% 33% 3614	7 7 9	3 5 5	7	%6 %6
361/2	25%	131 <u>4</u> -	//a	33½	22%	-1014	9	5		1/16
4434	31 1/2	531/4	11/6	40%	27/2	491/4	11	7		<del>2/10</del>
48% 53% 58%	34 % 37 ½ 40 %	58¾ 64 70%	1% 1% 1%	44% 49% 54%	30% 33½ 36%	54% 60 66%	11 13 15	7 7 9	13 15 17	%6 %6 %6
64 % 70% 77½ 85¼	44¾ 49 53½ 58¾	77% 84% 92% 102%	1% 1% 1% 1%	60% 66% 73½ 81%	40% 45 49% 54%	73½ 80¾ 86½ 98¼	15 17 19 21	9 11 11 13	17 19 21 25	%16 %16 %16 %16
	15½ 18% 23 27% 30% 32% 36½ 39% 44¾ 48% 53% 64% 70% 70%	SWS1  15½ 11½ 18% 13½ 23 16%  27½ 19½ 30% 21½ 32½ 23¾ 36½ 25½ 35% 27% 44¾ 31½ 48% 34½ 53% 37½ 58% 40% 64½ 44¾ 70¼ 49	SWSI DWDI  15½ 11½ - 18½ 13¾ - 23 16½ 27½  27¼ 19¼ 32½ 36½ 23¾ 39½ 36½ 25½ 12½ 36½ 39½ 48¼ 31½ 53¼ 48¼ 34¼ 58¾ 53⅓ 37½ 64 70¼ 49 84¾ 70¼ 49 84¾ 70¼ 49 84¾	A C  SWSI DWDI  15½ 11½ — ½ 18½ 13½ — ½ 23 16½ 27½ ½ 30½ 21½ 36½ ½ 36½ 23½ 39½ 39½ 36½ 25½ 12½ ¼ 36½ 25½ 12½ ¼ 44¼ 31½ 53½ 1½ 58½ 40½ 70½ 1½ 64 ½ 44¼ 77½ 1½ 64½ 49 84¼ 1½ 64½ 49 84¼ 1½ 70½ 49 84¾ 1½	A   C   D	A   C   D   SWSI   DWDI   SWSI   DWDI   SWSI   15½   11½   - ½   16½   11½   20½   13½   20½   13½   20½   13½   20½   13½   20½   13½   20½   21½   36½   ½   27½   18½   30½   23½   39½   ½   30½   20½   33½   20½   39½   23½   39½   23½   39½   23½   39½   23½   39½   23½   39½   23½   39½   23½   30½   20½   33½   22½   39½   33½   22½   39½   33½   22½   35½   37½   64   1½   40½   27½   35½   40½   40½   30½   58½   40½   70½   1½   54½   30½   58½   40½   70½   1½   54½   36½   66½   45½   70½   53½   92½   1½   66½   45½   49½   27½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   25½   1½   73½   49½   49½   45½	SWSI   DWDI   SWSI   DWDI   15½   11½   - ½   13¾   9¾   - 16½   11¾   - 23   16½   27¼   ¼   20½   13½   24¾   20½   13½   24¾   20½   13½   24¾   20½   13½   24¾   20½   13½   24¾   20½   23¾   36½   27½   36½   36½   27½   36½   20¾   36½   20¾   36½   20¾   36½   20¾   36½   20¾   36½   20¾   36½   20¾   36½   20¾   44¾   31½   53½   47¾   44¾   31½   53½   47¾   44¾   31½   53½   64   1½   44¾   30¾   53¾   64   66¾   45%   36¾   66½   66¾	A   B   C   D   M   SIDES	Record   R	A   C   D   SIDES   TOP & SOTTOM   SWSI   DWDI   SWSI

- 1. Mounted flush with edge of housing outlet.
- 2. Furnished as standard with holes on 4" centers from centerlines.

Dimensions should not be used for construction purposes unless certified. 20433-2602 Customer's Order No. CURE EXHAUST 2602-3 ADMIRAL EQUIP, P.O. 20433-2602 Shipping Tag # \_ Shipping Tag 🔾 🔔 Shipping Tag \*

Size	SW/DW	QTY	Holes
30	SW	1	YES
		<del></del>	
· · · · · · · · · · · · · · · · · · ·	1		
	30	70 64	70 CW

CERTIFIED FORM NO. **DRAWING** A-21 H

> 3155 S. SHIELDS **CHICAGO 60616**

New York Blower

**FLANGED DUTLET** 

for

AcF, PLR and HDI Fans

J-1595 FILE NO.

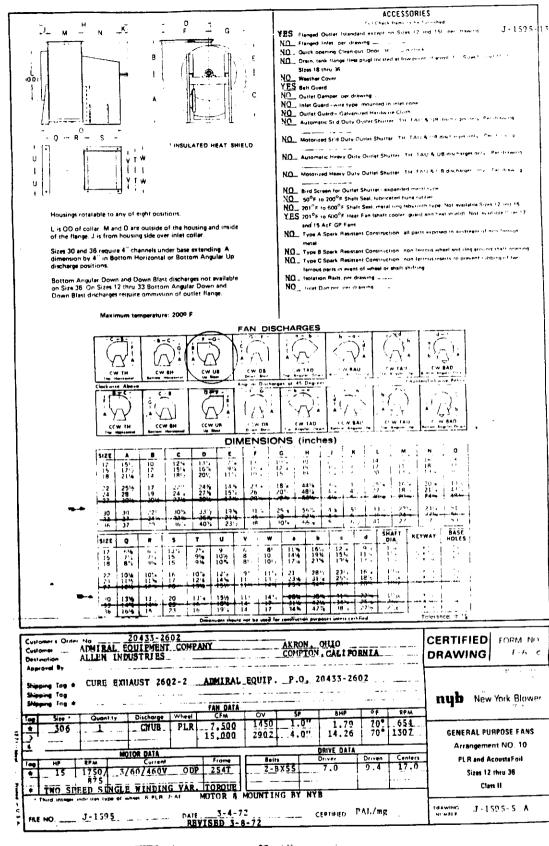
45

3-8-72 DATE \_\_\_\_

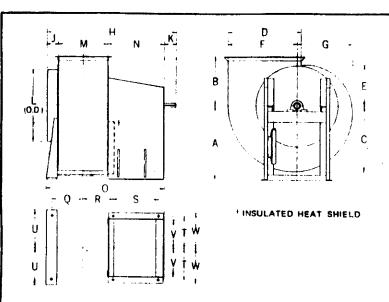
CERTIFIED pa1/mg

DRAWING NUMBER

J-1595-13



17F



Housings rotatable to any of eight positions.

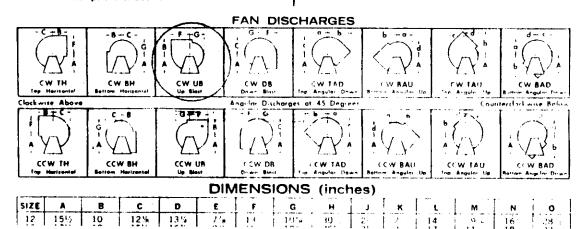
L is OD of collar. M and D are outside of the housing and inside of the flange. J is from housing side over inlet collar.

Sizes 30 and 36 require 4" channels under base extending. A dimension by 4" in Bottom Horizontal or Bottom Angular Up discharge positions.

Bottom Angular Down and Down Blast discharges not available on Size 36. On Sizes 12 thru 33 Bottom Angular Down and Down Blast discharges require ommission of outlet flange.

Maximum temperature: 2000 F

	ACCESSORIES
	( ) Chack frams to be Furnished.
YES	Flanged Outlet (standard except on Sizes 12 and 15), per drawing J-1595-
NO_	Flanged Inlet, per drawing
NO.	Quick opening Clean-out Door, at o'clock.
NO.	Drain, tank flange (less plug) located at low point of scroft, 17. Sizes 1.2 and 15. 17.
	Sizes 18 thru 36
NO_	Weather Cover,
YES.	Belt Guard
<u>NO_</u>	Outlet Damper, per drawing
NQ_	Inlet Guard-wire type, mounted in inlet cone
NO_	Outlet Guard - Galvanized Hardware Cloth
NO_	Automatic St'd Duty Outlet Shutter - TH, TAU & UB discharges only. Per drawing
NO_	Motorized St'd Duty Outlet Shutter - TH, TAU & UR discharges only - Per drawing
NO_	Automatic Heavy Duty Outlet ShutterTH, TAU & UB discharges only - Per drawing
NO_	Motorized Heavy Duty Outlet Shutter -TH, TAU & UB discharges only - Per drawing
NQ_	Bird Screen for Outlet Shutter-expanded metal type
	50°F to 200°F Shaft Seal, lubricated bune rubber.
	2010F to 6000F Shaft Seal, metal ring labyrinth type. Not available Sizes 12 and 15
	201 <sup>o</sup> F to 600 <sup>o</sup> F Heat Fan Ishaft cooler, guard and heat shield), Not available Sizes 12
	and 15 AcF GP Fans.
NO_	Type A Spark Resistant Constructionall parts exposed to airstream of non ferrous
	metal.
NO_	Type B Spark Resistant Construction non-ferrous wheel and ring around shaft opening
	Type C Spark Resistant Construction Inon-ferrous inserts to prevent rubbing of two
	ferrous parts in event of wheel or shaft shifting
NO.	Isolation Rails, per drawing



NO\_Inlet Damper, per drawing ........

		ENGINEERING SPECIFICATION	ENGINEERING SPECIFICATION				item	
Project No. 6360	Location	No. Regid. 1	Spec. No. 7	VP-13A		M ·		_
Feed	Pump		Hern. No.	30Z				-
		E	Equip. No.					_

#### **OPERATING CONDITIONS:**

Fluids Handled:

Capacity GPM @ P.T. & Max. Visc.

Pumping Temperature (P.T.)

SP. GR. & P.T.:

Viscosity

Viscosity:

Discharge Pressure: PSIG Suction Pressure: Minimum

Total Dynamic Head:

Vapor Pressure @ P.T.

N.P.S.H.

#### Isocyanate

15

70° F.

399 Centipoise Maximum

100 Centipoise Maximum

100 Maximum

15" of Hg. Vacuum

100 PSIG

Flooded

#### PUMP SPECIFICATIONS:

Manufacturer:

Type:

Model No.:

RPM:

Materials of Construction: Built-in Relief Valve:\_

Common Base for Pump and Motor:

Coupling Type

Coupling Guards:

Materials of Construction:

-Casing, Head and Bracket:

-Rotor:

-Idler:

-Internal Bushing:

-Brake Horsepower:

-Gear Reduction (Ratio)

-Gear Reducer Type:

Mechanical Seal:

Seal Chamber Oil Reservoir:

Seal Chamber Oil

Viking Pump Positive Displacement (HL4124R

780

Carbon Steel is satisfactory

Required

Set full open @ 125 PSIG

Required

Manufacturer's Standard

for Service

Required

Cast Iron

Steel

Cast Iron

Carbon Graphite

2.4

2.24:1

Type A Helical

Mechanical Seal with auxiliary Stuffing Box and Teflon Packing

Required

Mesamol1

Revision	6		
		Spec. By J. W. Jenny	9/82
	5	Checked By	
	4	Process Approval	<del></del>
	3	Project Approval	
	2	Purchase Order No.	
	9 REV 5-79 (Blank From)	Vendor	

2 01

Project - Area - Item Project No. 6360 Spec. No. VP-13A Location No. Regid.

MOTOR:

Type: RPM:

Horsepower:

Electrical:

TEFC

1750 3

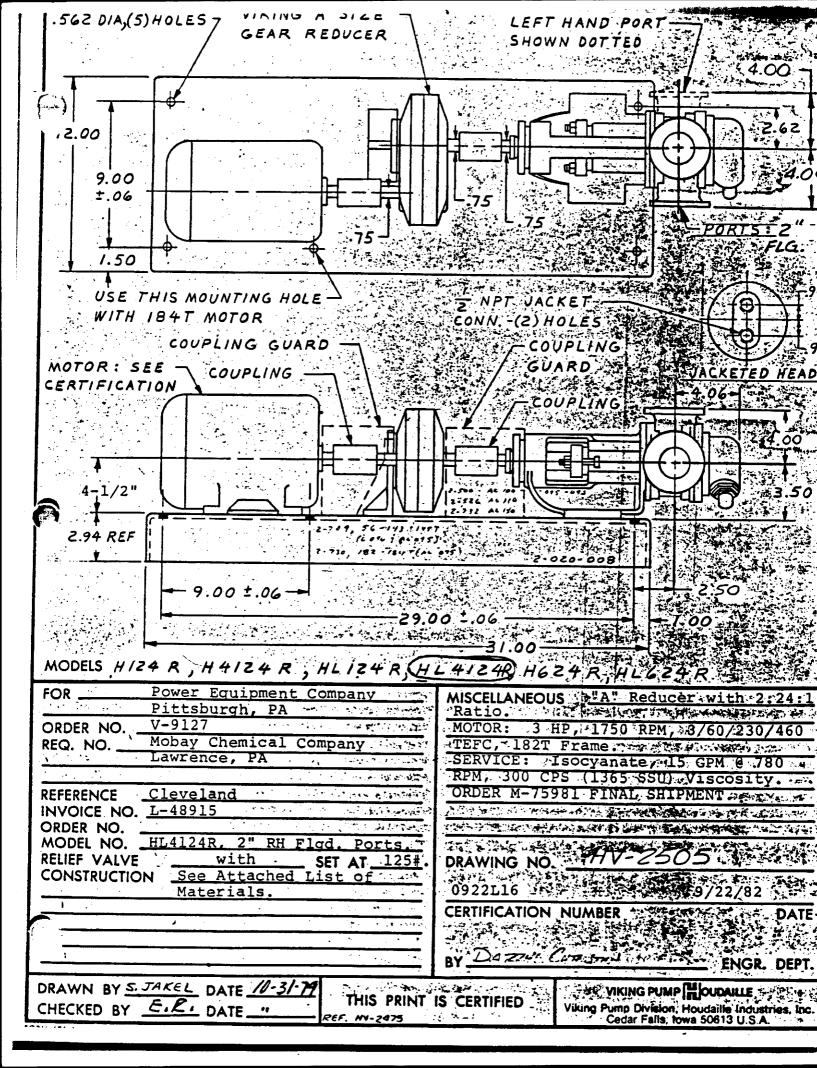
230/460 Volt, 3 Phase,

60 Hertz

**PUMP CONNECTIONS:** 

Inlet: Outlet:

2" 150# 2" 150#



to Accept 2-476-012 Viton Seal & With Auxiliary Stuffing Box for Viking Invoice Packing & Lantern Ring; Flush Connections for Liquid Circulation Between No. I-48915 Reservoir & Stuffing Box also Provided in Bracket - 3-490-022 Reservoir - Less Piping SEE NOTES BELOW

					Y	,	,	SEE NOTES BELOW
	Item		CL	PART NO	CL		QTY	[UESC]
不幸	2	3-075-087-080		2-075-037-100 2-109-022-880		C.I. C.G.	1	BRACKET BUSHING, Bracket 문
	3	•		2-542-001-376		Steel	4	PIPE PLUG 1/8
	4			2-469-002-376 2-066-009-375	C		]	GREASE FITTING 1/8
	5			2-505-004-375		Steel Steel	2	BOLT, 5/16 NC 2-1/4
	7			2-805-008-375		Steel	2 2	NUT, Jam Lock 5/16 NC
	8	·		2-150-004-255		Steel	8	WASHER 11/32,11/16,1/16 당
	1			- 100 001 233	Ĭ	3000	ľ	CAPSCREW 5/16 NC 3/4
	9			2-194-800-100		lc.r.	1	CASING 8
	10	<b>j</b>		2-542-001-376	С	Steel	2	PIPE PLUG 1/8 문
							, –	
	111	3-567-567-420-24		2-567-413-280-24	,	Stee1	1	I KOTOK
	12			2-647-005-260		Steel	1	SHAFT, Rotor
	13		$\square$	<u>2-596</u> -032-375	С	Steel	1	KEY, Rotor
	14 15	3-418-403-105-32		2-418-400-352 -30		Iron	1	IDLER
	13	<del></del>		<u>2-095</u> -011-880 <b>-</b> 02		C.G.	1	BUSHING, Idler
	16	3-370-401-015		2-370-400-100		C.I.		HEAD
	17			2-433-004-281		Stl. Carb.	li	IDLER PIN
	18			2-150-004-255	С	Steel	5	CAPSCREW 5/16 NC 3/4
		2 725 242 222 22						
	19	3-795-240- <u>000- 07</u>	_	0.150 004 055		C.I. H.T.	1	RELIEF VALVE, Set ~125 PSI
	20		ĺ	2-150-004-255	С	Steel	4	CAPSCREW 5/16 NC 3/4
	21	·		2-476-012-999		Viton -	1	MECHANICAL SEAL
	22		1	2-520-012-838	٦	Teflon	2	DACKING 1 1/0 3 5/0 1/4
	23		1	2-465-003-375		Steel	1	PACKING 1-1/8,1-5/8,1/4 LANTERN RING
	24			2-524-005-100		C.I.	; ;	PACKING GLAND
					ĺ		'	FACKING GLAND
	80	3-050-025- <u>999</u>	$\dashv$			Aluminum	1	BEARING HOUSING, Assembly
Ì	25			2-309-001-806-15	С	Comp. Asb.	2	GASKET, Head
	26			2-313-001-806-15		Comp. Asb.	ī	GASKET, Bracket
	27 28	•		2-308-002-806-62	C	Comp. Asb.	2	GASKET, 2" Pipe Flange
	40			2-316-003-806-30	C	Comp. Asb.	1	GASKET, Relief Valve
		,		,	1			
						• •		

NOTES:

... : 145. 311-F

1) Attach Tag to pipe plug (Item 32).

# NOTE

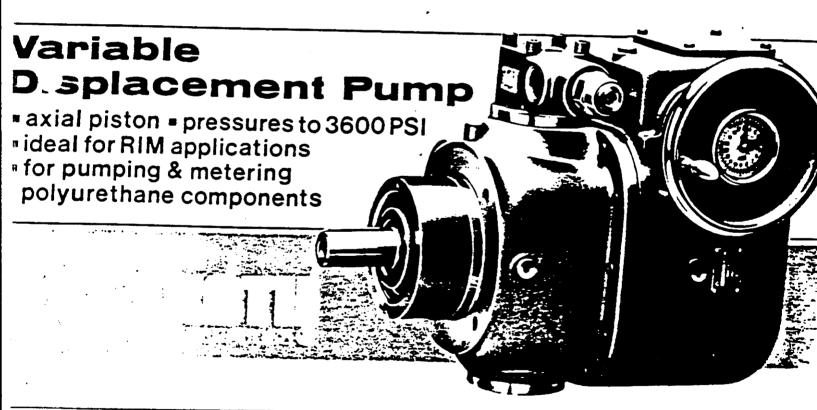
ALWAYS GIVE MODEL & SERIAL NO. WHEN ORDERING PARTS

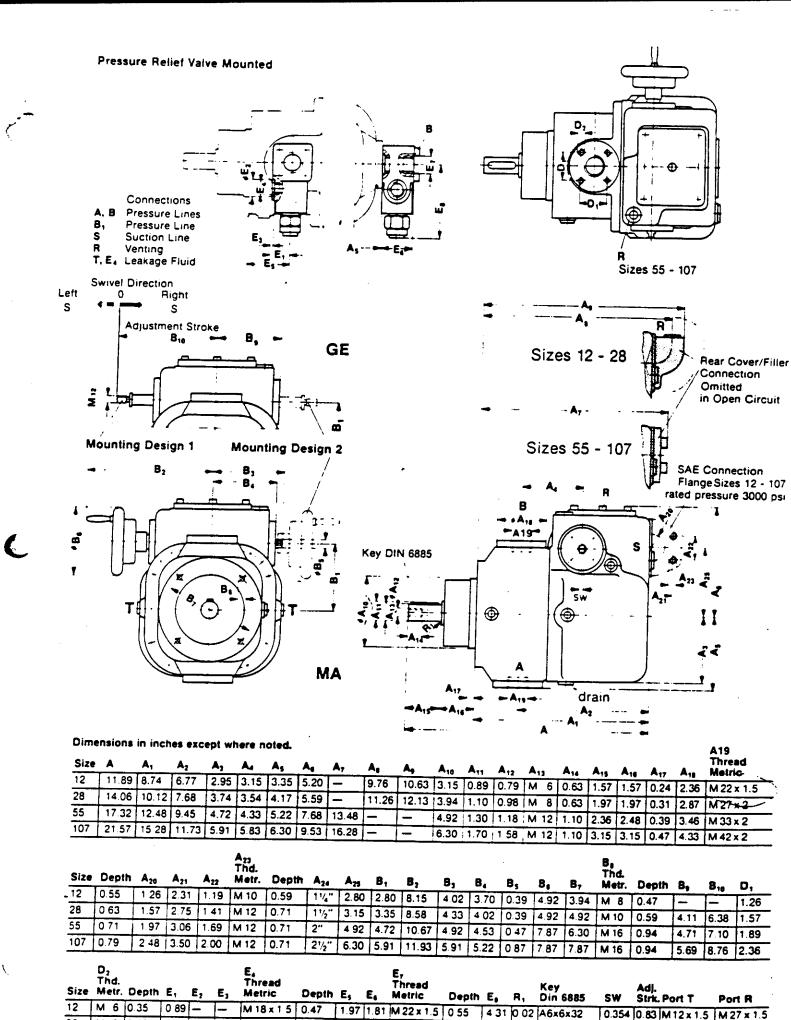
i	SHEET HO.	1 (	OF 2	MXDE	RFB-9-21-82.				
Ĺ				CHECK	McL 9-21-82				
3	144 4	1412-2641-	E 70	ENGR					224
31	LM 4~	1412-2041-	3/0	i			EX.	END CL	.004

4-1412-2641-570

Accept 2-476-012 Viton Seal & With Auxiliary Stuffing Box for Packing & Viking Invoice Lantern Ring; Flush Connections for Liquid Circulation Between Reservoir No. L-48915 & Stuffing Box also Provided in Bracket - 3-490-022 Reservoir - Less Piping -

•					•		SEE NOTES	BELOW
<u></u>	Item	SUB-ASSEMBLY NO.	CL PART NO.	CL	MATERIAL	QTY	DESCRIPTION	E D P DESC
k-ter)	29 30 31 32 33	3-490-022- <u>999</u>	2-540-024-357 2-542-008-110 2-542-023-376 2-542-001-376	0000	Iron Steel C.I. Steel Steel	]	RESERVOIR NIPPLE 1/2 x 2 PIPE PLUG 1/2 PIPE PLUG 1/4 (Drilled PIPE PLUG 1/8	HL 412
	34 35	•	2-500-057-610 2-595-208-610	CC	304 S.S. 304 S.S.	1 2	NAMEPLATE DRIVE SCREW	LFTD-CF
	36 37		2-ENV-338-000 2-TSM-000-000			1	INSTRUCTION ENVELOPE MAINTENANCE MANUAL	RCRB-I
	38 29 40 41	(See Note #1)	2-SID-119-200 2-TAG-200-000 2-TAG-797-000 2-TAG-888-000		÷ .	2 1 1 1	SEAL INSTALLATION DWG. PUMP CAUTION MATERIAL CONSTRUCTION INLET TO LUBE CHAMBER	RV
		·						
	NOTE	<u> </u>						
	1401E	See Page 1	NOTE	-				4-141
			ALWAYS GIVE MODEL & SERIA NO. WHEN CROSSIN PARTS	!. G.				4-1412-2641-570
SH	HEET N	0. <sup>2</sup> of 2	MADE RFB 9-21-82 + CHECK MCL 9-21-82					
22 L	Ä i	1-1412-2641-570	ENGR				EX. END CL. 004	
~							EX. 510 CE. 004	





2 44 1.97 M 27 x 2

3.03 2.20 M 33 x 2

3.54 2.56 M 42 x 2

0 63

0.71

0.63

071

0.79

4 55 0 02 AS8x7x40

5 26 0 06 AS8×7×50

0.354 1.00 M 16 x 1.5 M 27 x 1.5

0.393 1.25 M 18 x 1 5

28

107

M 8 0 43

M 10 0 49

M 12 0 59

1 08 1 10 0 04 M 22 x 1 5

1 30 1 30 0 06 M 27 x 2

1 58 1 57 0 06 M 33 x 2

Specifically designed for precise metering control of nigh-viscosity chemicals, polymers and iso-cyanates, the bent axis A2VK offers these important advantages:

- Operating pressures up to 3600 PSI
- Low operational sound level ow flow pulsation

Low suction pressure, even with highest viscosity flow mediums

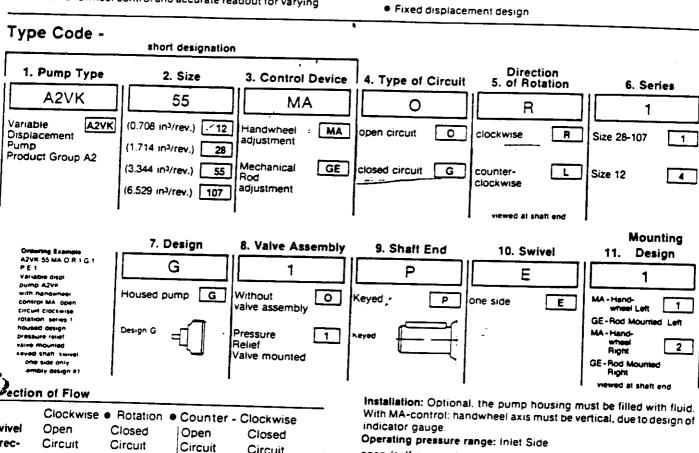
Precise handwheel control and accurate readout for varying

#### displacements

- Precise repeatability of displacement settings
- Internal sealing matched to flow medium
- Optimum volumetric energy/efficiency

Features available for special applications:

 Special O-Rings and graphite-impregnated double shaft seals. (refer to back page.)



Swivel Direc-Circuit tion S to B A to B S to A B to A Right A Plugged B Plugged S to A B to A S to B A to B Left B Plugged A Plugged

open (self-priming) circuit:

suction pressure of 14.5 - 43.5 psi absolute

closed (boosted) circuit:

Summation of pressure at ports A and B no greater than 3600 psi (intermittent: 4600 psi), leakage/drain line connected at port T.

Operating pressure range: Outlet Side

pressure at port A or B: max. cont. operating pressure. 3600 psi max. intermittent pressure: 4600 psi

#### Technical Data

Size		Disal				
Displacement		Displ.	12	28	55	107
Max. flow output (at speed listed, open circuit,		in³/rev.	0.708	1.714	3.344	6.529
a viscosity of 36 centistokes)		GPM	2.7	6.7	13	25.4
- viscosity of 55 centistores)	1200 RPM	GPM	3.7	8.9	17.4	33.9
	1800 RPM	GPM	5.5	13.4	26.1	40 ••
Horsepower at p = 3625 psi	900 RPM	HP	5.7	14.2	27.5	53.7
and speed listed	1200 RPM	HP	7.8	18.8		71.7
MA manual control	1800 RPM	HP	11.6	28.3	55.2	, ,,,
landwheel revolutions for pump stroke (0-max	flow)	Rev.	10.6	12.7	16	13.4
Max. adjustment force at handwheel		lbs.	15.4	15.4	17.6	
Veight approx. (pump w. control)		lbs.	42	80		26.4
GE W Inical Rod Control					141	258
diusnt stroke (0-max. flow)		in.	.83	1.0	1.25	1.58
-,-stment force (internal adjustment	1450 psi	lbs.		50.6	77	123.2
rce, without acceleration force)	2175 psi	lbs.		75.9	118.8	184.8
pressure listed )	2900 psi	lbs.		101.2	160.6	
3625 psi		lbs.		126.5	262.4	241.4
inimum allowable swivel time in sec. 0-max. fi	ow	sec.		1.8		308
eight approx (pump w control)				1.0	2 4	3.0

## S E C T I O N L REXROTH METERING PUMPS AND ACCESSORIES

( + 1m)

	REX	ROTH METI	ERING PUMPS AND ACCESSORIES	
ITEM NO.		NO.	DESCRIPTION	UNIT
9608010	L-4		PUMP, Rexroth type A2VK28MAG Rl GOOP/El apx. maximum delivery 28cc/revolution. Closed circuit design with double shaft sea	Ea.
9608015	L-3		PUMP, Rexroth type A2VK28MAO Rl GOOP/El Apx. maximum delivery 28cc/revolution. Open circuit design with double shaft seal	Ea.
9608011 🛩	L-3&4	2 .	SHAFT SEAL, for use in either the inner or outer position for pumps part #9603010 and #9608015	Ea.
9608002	L-3&4	1	ADAPTER, $\#68142$ M 12 X 1.5 to $1/4$ " NPT for use on special pumps only.	Ea.
9608012		1	ADAPTER, #68144 M 16 X 1.5 to 3/8" NPT for use with part #9608010 (Bleed port)	Ea.
9608013∜	L-3&4	3	"O" RING, for seal cage (9608010 & 9608015)	Ea.
9608016	L-3&4	4	ADAPTER, discharge for pumps #9608010 & 9608015. Also for use on suction on pump #9608010. PN68149 Metric M27 X 2 to 3/4" F. NPT.	Ea.
9608017	L-3	5	FLANGE, suction for pump #9608015 only TS AEP-12-20.	Ea.
9608018	L-3	6	BOLT KIT, for use with flange part #9608017. #BK-G-14(4) 4 bolts per kit.	Kit
9608019	L-3	7	"O" RING, for use with flange part #9608017. Number Z-225.	Ea.
9608020	L-4		PUMP, Rexroth type A2VK55MAG Rl GOOP/E apx. maximum delivery 55cc/revolution. Closed circuit design with double shaft sea	Ea.
9608025	L-3		PUMP, Rexroth type A2VK55MAO Rl GOOP/El Apx. maximum delivery 55cc/revolution. Open circuit design with double shaft seal.	Ea.
9608021	L-3&4	2	SHAFT SEAL, for use in either the inner or outer position for pumps part #9608020 and #9608025.	Ea.
9608022	L-3&4	1	ADAPTER, #68145 M 18 X 1.5 to 1/2"NPT for use with part #9608020 (Bleed port).	Ea.
9608023	L-3&4	3	"O" RING for seal cage (9608020 & 9608025)	Ea.

ITEM NO.	FIG.	ILLUS.	DESCRIPTION	UNIT
9608026	L-3&4	4	ADAPTER, discharge for pumps #9608020 & 9608025. Also for use on suction on pump #9608025. PN-68150 metric M33 X 2 to 1"F. NPT.	Ea.
9608027	L-3	8	FLANGE, suction for pump #9608025 only TS AEP	Ea.
9608028	L-3	9	BOLT KIT, for use with flange part #9608027 #BK-G-32(4) 4 bolts per kit.	Kit
9608029	L-3	10	"O" RING, for use with flange part #9608027. #2-228	Ea.

# NEW DOUBLE SEAL FEATURE IMPROVES PUMP PERFORMANCE

hex in now offers a specially designed seal puckage to eliminate shaft seal leakage problems encountered due to high internal pump case pressures, abrasive medium contaminants or operational shaft misalignments.

The modification package utilizes the following components:

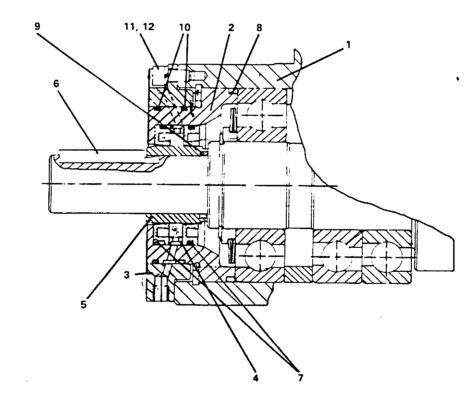
- Addition of a second graphite-impregnated radial seal ring mounted with a spacer (4) to create a cavity between the two radial seal rings (7).
- Modification of the front cover (2) to accommodate the second radial seal ring, with 2 connections to provide for flushing capability between the seal rings.
- Addition of adaptor flange (3), also with 2 flushing connections for further support and sealing capability.

- Additional O-rings (10) between adaptor flange (3) and front cover (2), and between front cover and radial sealrings (7).
- Reduction in length of the shaft key (6).

Flushing between the seal rings can be done using DOP or Mesamoll, or any other appropriate neutralizer, in combination with normal head pressure from a reservoir or tank, or via an inexpensive screw-type or gear pump. As a result, any fluid leaking through the inner shaft seal is trapped and washed away before it can penetrate through the outer shaft seal.

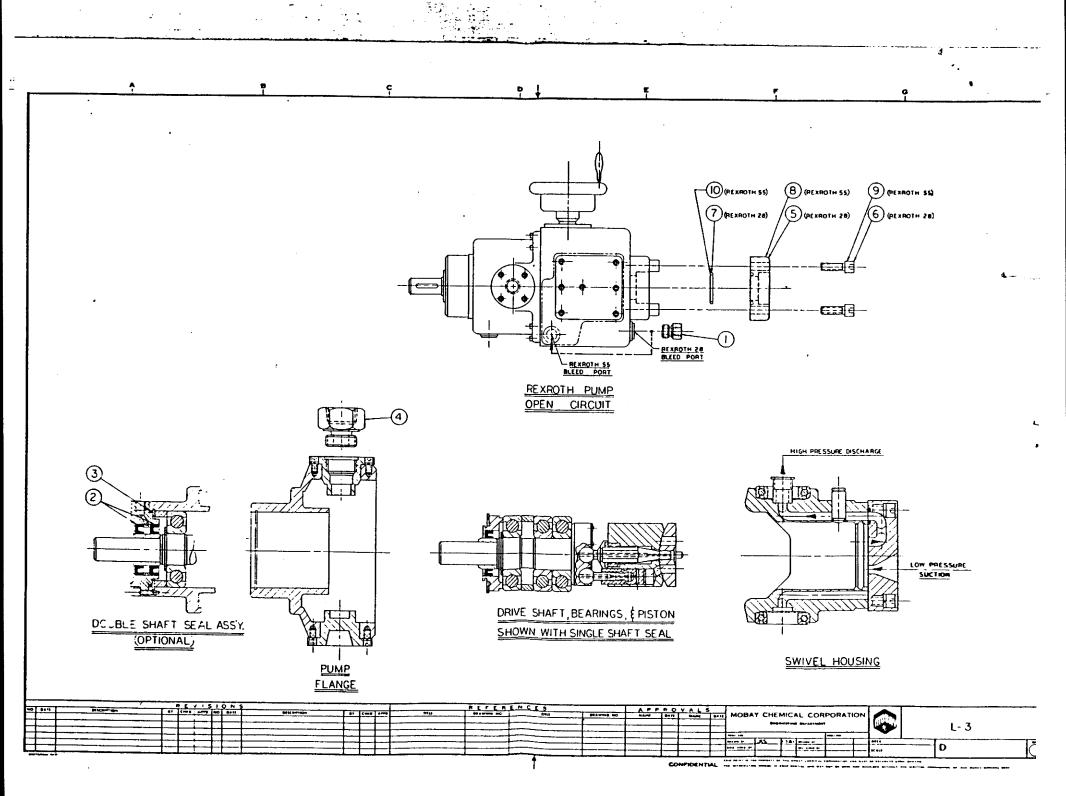
When ordering a Model A2VK with this seal feature, please provide the complete pump model code information and add (under "Additional Information in clear text") "with double shaft seal configuration."

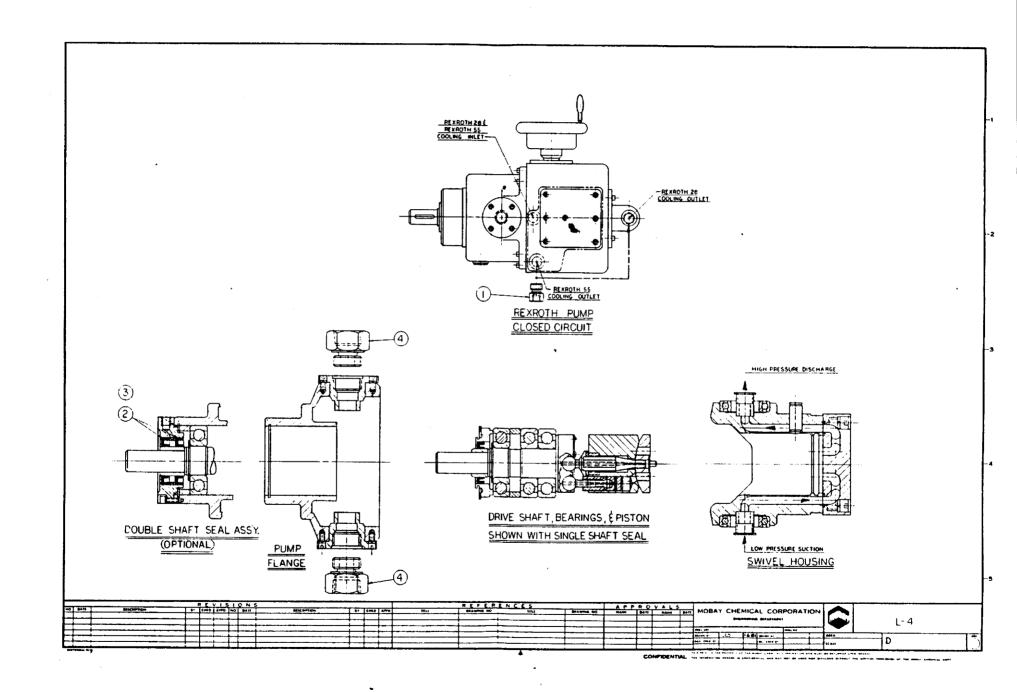
- 1 Pump Housing
- 2 · Front Cover
- 3 Adaptor Ring (Flange)
- 4 · Spacer Ring
- 5 Liner Bushing
- 6 Shaft Key
- 7 Radial Seal Ring
- 8 · O-Ring
- ng ng
- 11 Cap Screw
- 12 Lock Washer



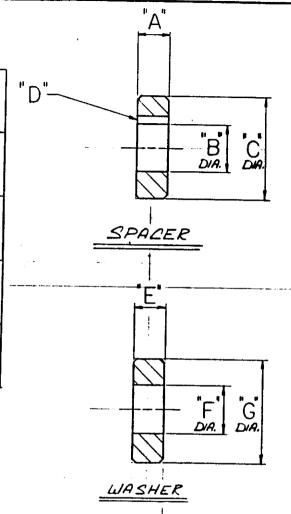
v2VK . . . Just part of a full spectrum of valves, pumps, motors and complete hydraulic systems, from the world leader . . .







REXROTH PUMP SIZES	DIM.	<i>□m.</i> "В"	D/M.	KEYWAY DIM. D"	E"	<i>□IM</i> . "F"	DIM.	COUPLING SHAFT BOLT
<b>#</b> 12	1/4"	.787 .790	1/4"	.236 W. X.103 H.	3/16	.236	1/4"	M 6
<b>*</b> 28	1/4"	<u>984</u> .987	1/2"	.317 Ш. XI20 Н.	3/16"	·3/5 ·3/7	1/2	_M8
<sup>#</sup> 55	1/4"	1.182 1.185	13/4"	! .3/7 <i>Ш.</i> х .12 <i>ОН</i> .	3/16"	.47 <u>3</u> .475	13/4	MI2
<b>"</b> 107	1/4" .	1.575 1.578	2/8"	.472 W. X.120H.	3/16"	.473 .475	21/8	MI2

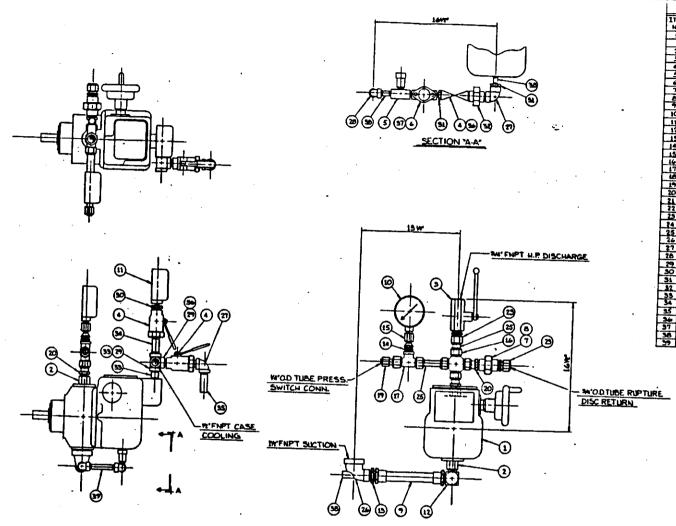


\* NOTE

1. MATERIAL-CRS

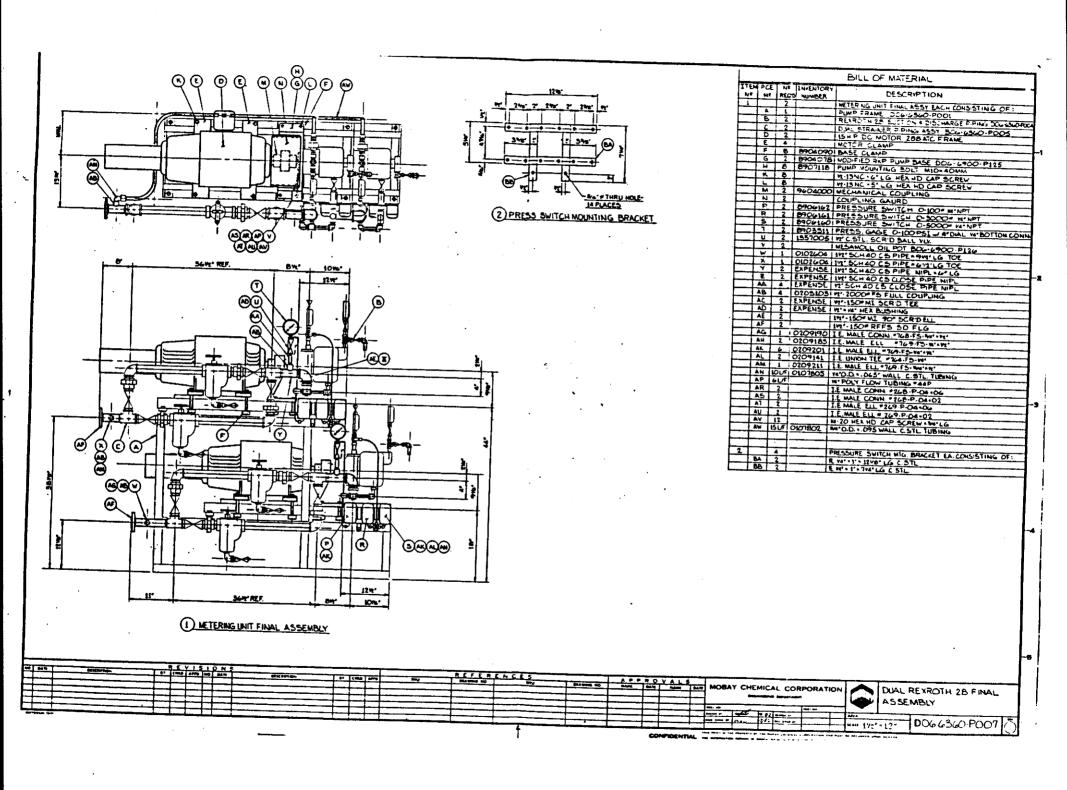
2. BREAK ALL OUTSIDE CORNERS

No DATE DESCRIPTION			IONS		REFERENCES	 PPRO	VALS		7		
UEX RIFILON	SY CKD.A	<u>~}``</u>	DATE	DESCRIPTION BY CKD APD.	TITLE DWG No.	 DATE		DATE	MOBAY CHEMICAL CORPORATION		PENRATU DUAS
	11	╅	1 -	<del> </del>					ENGINEERING DEPARTMENT	MUBBIN	REXROTH PUMP
	$\Box$	T				 			PROJ. LOC. PROJ. Ne.		DOUBLE SHAFT SEAL
	<del></del>	╁	┼						DWG av 11.7297 INT TOSS and	ATTA	WASHERS IN
		+	<del>                                     </del>	<del> </del>	<del></del>	$\Box$			CHED. BY 1/2 239 W. CHED. BY	SCALE -	B 26-6902-P159



<u> </u>			BILL OF MATERAIL
ITEM	Nº	INVENTO	DESCRIPTION
_1	1	960801	
			EE WITH DOUB & AMARE TOWN AZVEZBMANGRIGOC
2	2	9600010	M27-MA-FAPT BUSHING
_3	1	T DAG 10	DI W JAMES BURY BALL WILL AND ALL
4	3	135700	S VI' C.STL SCR D BALL VLV
_5_	1	8705010	TE MANATROL COLORS ON MILES
٠.	-		
-2-	1	B148275	THE RUPTURE DISC ASSY, ADDOG S. INC.
-		8148775	THE DISC . ADDODE BUILDET
		-	I WE LEAT HOSE ASSY IN IN
10	1	0903315	PRESS, GAGE OLGOCOMIT .
-11		8703511	
12	-1		
-12			
14	-4-1		
부	-		
19		0209113	I.E. CRCSS -752-FS-W MTUDE
18	-	UZD4764	I.E. FE BRANCH TEE - 777-FD- BAT BAT UBE- BOFN
19	-		
20	2	020210	I.E. ADAPTER + 783-F5- MF-M' NOTUBE - M'TUBE
21	-	0107103	I.E. ADAPTER + 722-F30-M- NOT MITUBE - NOTHINE
22	-		
25	2	0200102	16 100
24	^	207177	I E MALE CONN 768-F5- WY-NET BUTLESE - BUT HIPT
25			
26	1	-101002	ME OD 095 WALL TUBING . 9 LG CUT TO SUIT
27		0254106	
26	2	EXPENSE	W 300 DI 90 SCRD ELL
29	1 1	0254115	WE'SOO'DE SCRID TEE
30			WI'-W' CS HEX BUSHING
34	2 1	0203119	PER SER CS HEX BUSHING
32		2352205	MI-SCOOT OF THE DUSHING
	2.10	0102407	N' SOO DI SCR'D UNION I TO I SEATS
M		XPENSE	WY SCH 40 CS PIPE HIPL STLG
3	- 11	APENSE	MY SCH 40 CS PIPE 13'LG TOE
4		APENSE	MY SCH AD CS CLOSE PIPE NIPL
7			MO'SCH 40 CS CLOSE PIPE NIPL
8	10	PENSE	NO SCH 40 CS PIPE NIPL & LG
9	7	<b>IPENSE</b>	MY SCH 40 CS PIPE NIPL & AVELG

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ALL SALES TO MS	
THE CONTRACT OF THE CONTRACT O	- 1
BILLOWING BY COMP MAY COMPANY NO. 1 APPROVALS	
2) Com Javo My Salesto O My Ballon ID MA MAN JUST MORAY CHEMICAL CORPORATION REXPORT 28 SUCTION 4	
REXPOSITION 28 SUCTION 4	- 1
DISCHARGE PIPING ASSY	
	- 1
100   100	
	7
. DO6 6360-P004	٦.
COMPANIES. And want to the second of the sec	ノ



<u>E</u>	rocess type	Leak Detection Concentration	_		N/A	
	-	Concentration	_			
D	quipment Type	(ppm or mg/m³)  Measured at  Inches  from Source		of Leak Detection	Repairs Initiated (days after detection)	
	ump seals					
	Packed		•			
	Mechanical			<del></del>		
	Double mechanical					
C	ompressor seals					
	langes					
	alves					
	Gas				-	
	Liquid					•
Pı	ressure relief devices (gas or vapor only)					
Sa	ample connections					
v.	Gas					
	Liquid _					
01	pen-ended lines					
	Gas					
	Liquid _					
	_		,			
]	Use the following co POVA = Portable orga FPM = Fixed point mo O = Other (specify)	des to designate on the control of t	detection de			

M

 $\boxtimes$ 1

sheet

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

ì				Ka /vr	Vessel	Vessel	Vessel		Operating	-				
	Vessel	Roof _	Composition of Stored	Kg/yr Throughput (KKKK)	Filling	Filling	Inner	Vessel Height	Vessel	Vessel Emission	Design Flow	Vent Diameter	Control Efficiency	Basis for
	Type	Seals'	Materials <sup>3</sup>	per year)	(gpm)	(min)	(m)	<u>(m)</u>	(1)	Controls'	Rate	(cm)	(%)	Estimate <sup>6</sup>
	<u>P-H</u>	N/A	96,425#	595,680	85	180	3.66	4.57	gal	Manual Valve Pressure	N/A	2.54	100%	ÇS.
	P.	N/A	760#	595,680	5	15	11.89	8.84		relf. v.		•95	100%	C <del>-</del> S
											$\geq$			
		-												
								_						
										_				

<sup>1</sup>Use the following codes to designate vessel type:

F = Fixed roof

CIF = Contact internal floating roof
NCIF = Noncontact internal floating roof

EFR = External floating roof

P - Pressure vessel (indicate pressure rating)

H = Horizontal

U = Underground

<sup>2</sup>Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary

MS2 = Shoe-mounted secondary

MS2R = Rim-mounted, secondary

IM1 = Liquid-mounted resilient filled seal, primary

LM2 = Rim-mounted shield

LMW = Weather shield

VM1 = Vapor mounted resilient filled seal, primary

VM2 \* Rim-mounted secondary

VMW = Weather shield

Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

<sup>4</sup>Other than floating roofs

<sup>5</sup>Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

<sup>6</sup>Use the following codes to designate basis for estimate of control efficiency:

C = Calculations

S = Sampling

<sup>\*</sup>inches X 2.540 = amt.

<sup>\*</sup>feet X .3048 = meters

120

Vessel Type P-H	Roof Seals <sup>2</sup>	Composition of Stored Haterials  96,425#  760#	Kg/yr Throughput (NECKI'S per year)  595,680	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	(m)		(1) 9,500 qal	Emission Controls Manual Valve	Rate	Vent Diameter (cm) 2,54	Control Efficiency (%) 100%	Basis for Estimate
				85	180	3.66	4.57	qal	Valve		2,/54		
P.	N/A	760#	505 <b>6</b> 00										
			393,000	5	15	11.89	8.84		Pressure relf. v.		<u>.′95</u>	100%	C-S
			**		-					<del></del>			
				<del>-</del>	· <del>!</del>						•		
	***************************************			-					*****	<u>.</u>	·		
				-		<del></del>					,		<del></del>

lise the following codes to designate vessel type:

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= Fixed roof

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- Pressure vessel (indicate pressure rating)

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= Liquid-mounted resilient filled seal, primary

IM2 = Rim-mounted shield ·

LMW = Weather shield

VM1 = Vapor mounted resilient filled seal, primary

VM2 = Rim-mounted secondary

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<sup>&</sup>lt;sup>3</sup>Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

<sup>&</sup>lt;sup>4</sup>Other than floating roofs

Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

<sup>&</sup>lt;sup>6</sup>Use the following codes to designate basis for estimate of control efficiency:

C = Calculations

S = Sampling

<sup>\*</sup>inches X 2.540 = amt.

<sup>\*</sup>feet X .3048 = meters

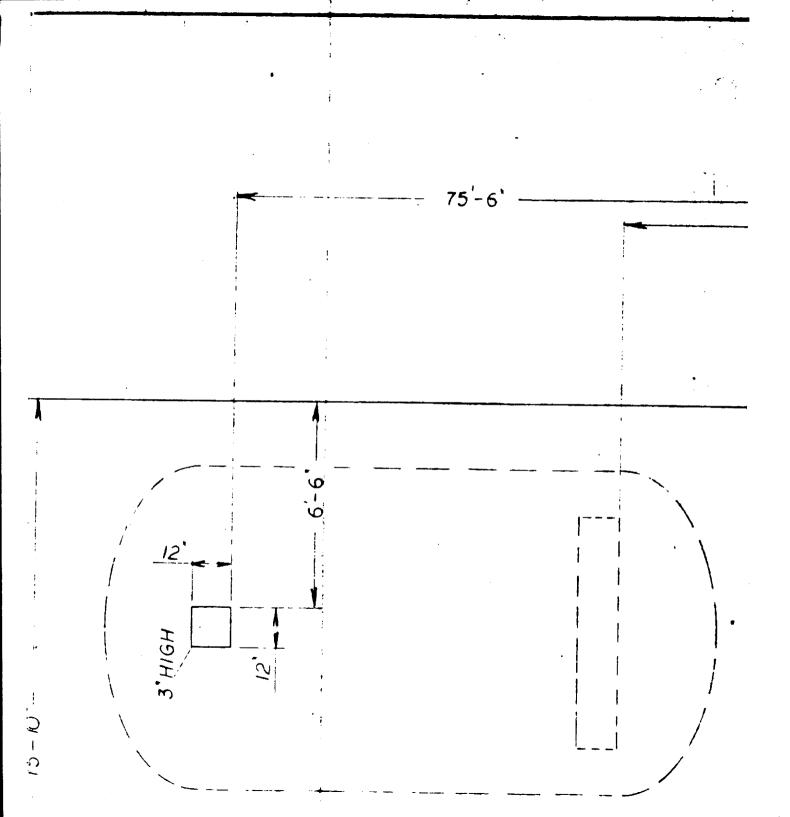
Mobay Chemical Corporation	ENGINEERING SPECIFICATION	Sheet 1 Of 1		
Location	SPE	EC. NO. MFM-5		
WORK TANK				
` . Size:	120			
	120 gallon (36" O.D.)			
Pressure Rating:	110 psig ASME Code			
Closure:	Top - Clamp Type - Sealed	with Thiokol Gasket		
Material:	Carbon Steel			
Inlet and Outlet:	2: NPT Full Coupling and P tank at 45° from Sight Gla (12 o'clock) inlet	ipe on shoulder of ss Connection		
	<pre>1" NPT Full Coupling and P: tank at 180° from 2" Coupl: (6 o'clock) recycle</pre>	ipe on shoulder of ing and Pipe		
	2" FNPT (outlet at bottom of	of tank)		
Sight Glass Conn.:	<pre>1" NPT top and bottom at 9' 22" high plate coil)</pre>	° & 180° (to clear		
•	<pre>l" NPT Full Coupling in hea from 2" Filler Cap</pre>	ad of tank - 45°		
•	2" MNPT in head of tank wit	h Filler Cap		
Inside Lining:	Baked on Plasite (Phenolic)			
Exterior Finish:	Non-Leafing Aluminum Primer	•		
Support:	4 legs to allow 19" clearan outlet to floor (one hole i	ce from 2" bottom n each mounting pad)		
Agitator:	Vertical shaft in center of paddles extending from 1" a Driven by 4AM Gast Air Moto angle worm gear drive. Shapacking. No brass or copper surfaces (nylon bearings)	tank with three bove bottom of tank. r through 30:1 right ft sealed with teflor		
lisc.:	(1) 85-203 Air Pressure Reg	gulator with pressure		
	Pressure relief valve on tar Manual vent valve	nk set at 110# psig		
	Manual air motor speed contr	col		
	All items to be connected an	nd tested		
	All open piping connections during shipment	to be covered .		
7		W. Clarkin 6/1/81		

-1		Spec By	W. Clarkin	6/1/81
ş		Design Approval		
į	3	Process Approval		
I	2	Purchase Order No		
<u> </u>		Vendor		

MOBAY CHEMICAL CO						ENGINEERI	ING DEPARTMEN
		NK SPE	CIFIC	ATIO	H	EMEET NO. 1	S
Project No.	Location				No. Req'd.	Spec. No.	Item No.
Capacity Lbs./Gal.	Warrahi of Contr	<del></del>	<del></del>			MFM-5	
120 GAL. 10	Weight of Content	nls 7 a	<del> </del>	Weis	ght of Tank		Weight
Material of Construction CAR	ANTICHEF	55.	Ц	<u>46</u>	LBS.	1,66	LBS.
Corrosion Allowance NONE	, <del></del>						
Code Requirements ASME		/I	Hyd	frostatio	ic Tost 1/05	DATA	
Operating Pressure MAX.	0 PSIG					251G	
Operating Temperature MAX.	150°F		Desi	ign Ten	mperature - 20°	10+650°	
Gaskets UNGRAPHITE	D ASBESTOS		Pain	It ON	JE COAT P		ISIDE ONLY
Connections		zzie Sche			-		
Connections	2° & Smaller	15E :	<u> 300</u>	<u>O#</u>	F. S. Couplin	es w/PLUG	6.5.
Mk Ne. Descript	& Larger	0:		T			
A LI IRECYCLE	/lon	Size	Mk F1	No.	ILEVELGA	escription	Size
BILLFILL	· ·	1	F2	1-1-	LEVEL G	<del>175</del>	
CIOUTLET		2.	FS		SPARE	<u> </u>	- 1 10
D 1 SPARE		2"	F4			IDICATOR	10
ELLIEVELLON	(ROL						7
<del></del>		<u> </u>					
				لــــــــــــــــــــــــــــــــــــــ			
TANK DESIGNATION	: DAY TAUK			÷	and the Comment		1000000
SPECIFICATIONS:	1977 ASME C	ODE	SF	CTY	ר" שועד ואר	MICIONIT	70
JOINT EFFICIENCY	· IIE A DE RO					INDIOMT	
JUINI LI ILILALI	-		NO >				
• •	SHELL 707	16 N/	<b>0</b> %	-RA	Y		<b>5</b>
PREPARATION: ALL	COUPLINGS	OT :	BE	PL	NGGED F	TOP SHIP	WENT T
LINING: BAKED ON	PI ASITE (T	OUF!	101	10)	المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية	Or Shitt is	ALE WILL
MATH OF CONST.	וובדעה ז כוו	″∏∟ı∢ .—, ,		167			
MAT'L OF CONST.:	HEADD & SH	ELL	SA	25:	5 GRD.C	. 200	
	COUPLINGS	SA	105	GR	⟨D, ∏		
INSPECTION: BY	CODE APPF	<b>₹</b> OVE	:D /	AGF	IN TE	REQUIRE	-
MANERIATE			، <i>ح</i> ب	~~ <u>_</u>		Leanive	

NAMEPLATE:	ZION CO	RPORATION	 ا ما ا ا	
			4	

· [ .	5	Spec. By	IJ. MORTON	4-11-80
9	4	Design Approval		
3		Process Approval		
	1 IVDNATED			
	TIUPDATED			



	5	Spec By	J.MORTON	4-11-80
Š	1	Design Approval		
į	3	Process Approval		
ł	2	Purchase Order No		
<u></u>	' '	Vendor		

Spec By J.MORTON 4-11-80 Design Approval 3 Process Approval Purchase Order No Vendor

5

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
1	2-1-88	6:56 AM	2-1-88	7:32 AM
	8-30-88	6:42 AM	8-30-88	7:15 AM
3	10-12-88	3:00 PM	10-12-88	3:10 PM
4	11-15-88	4:05 PM	11-15-88	4:35 PM
5	11-28-88	11:10 AM	11-28-88	11:28 AM
6				

10.24 Specify the weather conditions at the time of each release. (N/A)

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1			•		
2					
3					
	-				
6					

	[_]	Mark	(X)	this	box	if	you	attach	a	continuation	sheet.
--	-----	------	-----	------	-----	----	-----	--------	---	--------------	--------

### PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
1	2-1-88	6:56 AM	2-1-88	7:32 AM
2	8-30-88	6:42 AM	8-30-88	7:15 AM
3	10-12-88	3:00 PM	10-12-88	3:10 PM
4	11-15-88	4:05 PM	11-15-88	4:35 PM
5	11-28-88	11:10 AM	11-28-88	11:28 AM
6		400,000		

10.24 Specify the weather conditions at the time of each release. (N/A)

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1			<u> </u>		
2					
3		-			
4				-	
5				***************************************	
6					

 $[\overline{X}]$  Mark (X) this box if you attach a continuation sheet.

	(N/i		• • • • • • • • • • • • • • • • • • • •	Migration Beyond	Quantity
	Media	Quantity (kg)	Method of Release	Boundaries (Y/N)	Migrated (kg)
	Land				
	Air	-			
	Groundwater				
	Surface water				
10.26	Specify the phys	sical state and c	concentration of the listed	substance at the	e time and
	Release No	(N/A)	•••••	·······	
	Point of release	e	•••••	· · · · ·	•
	Physical state .	• • • • • • • • • • • • • • • • • • • •	•••••		
	Concentration (	()	•••••		
					-

101 Urethane Downtime Record Tools Date 2-1-88 Shift DAY Minutes 460 1. Calibrations 7. Tool Repairs 13. High Press. Equip . Hydraulics 8. Post-Cure Baskets 14. Ovens 3. Heat Recovery 9. Lack of Materials 15. Errors (Explain) 4. Main/Trans. Conveyors 10. Air/Vacuum Loss 16. Misc. (Explain) 5. Pallet Repairs 11. Electrical 17. Planned Downtime 6. Sched. Mold Changes 12. Falling Panels 18. Schedule Downtime Down | Down | Time | Time Time Time | Code Down Up Mins Remarks
TDI LEAKING INTO PLASTIC 36 BAG OF MIXHEAD FROM ISO-MESAMOLL 740 800 Heat Recovery SPOT 40- 605- 686 NOT LOCK! 938 2 B3 LOW INCET PRESSURE SWITCHED FROM TOP TO BOTTOM STRAIN BROKEN LID ROLLER SPOT 18 454 151 237 10 Total Mechanical Downtime = 71 - 15.4 % Undogged Pallets = Unpoured Pallets = Total Planned Downtime = Number 3 Dogs = \_\_\_\_ Total Schedule Downtime = Wire Station = \_\_\_\_ Total Downtime This Report =  $\frac{71}{15.4}$ 

Date: 8-30-88

Shift: DAY

Tools: 105
Minutes: 460

1. Calibrations

2. Hydraulics

Total Pcs:

3. Heat Recovery

4. Main/Trans. Conveyors

5. Pallet Repairs

6. Sched. Mold Changes

7. Tool Repairs

8. Post Cure Baskets

9. Lack of Materials

10. Air/Vacuum Loss

11. Electrical

12. Falling Panels

13. High Pressure Equip.

14. Ovens

15. Errors ( Explain )

16. Misc. ( Explain )

17. Planned Downtime

18. Schedule Downtime

L				
Downtime Code	Time Down	Time Up	Mins. Down	Downtime Remarks
12	628	631	3	SPOT 43 486-5 PANEL FELL
13	642	715	33	REPLACE Rupture ISO DIC UNION
12	757	800	3	3pot 43 486 famel
12	914	917	3	3pot 43 486 panel 5pot 38 - 488 pane feel 5pot 7 481-4
12.	9 30	932	م	
12	946	949	3	Spot 43 486-5,4 OUT BECAUSE
7,12	958	1001	3	SPOT 43 486-5,4 OUT BECAUSE OF FALLING PANELS SPOT 40 487-35 REASON
4	1029	1031	2	SPOT 40 487-35 REASON NOT DOGGED AT MOLD CHÁ STA. UNKNOWN
4	1031	10 32	_1	SPOT 42 438 91112 NOT DOGGED AT MOLD CHASTA.
12	1105	1008	3	800+ 35- 187 pane juice
12	1120	1/23	<b>3</b> :	SPOT 7 ALUMINUS RIE
12	11 23	1129	6	SPOT 7 481-4 PANEL FELL, ALUMINUM FIN BENT
7	1129	11 31	ρ	REMOVE SPOT 7 TO REPAIR ALUMINUM FIN, SPOT 35
12	1235	1237	2	SPOT 35 PANEL FELL
6	107	110	3	SPO+ 48- 438 m 488 aut
51	2 46	249	3	SPOT 35 487-2 Panel Fell
				•

Total Mechanical Downtime =	75	min.	16.3 %
Total Planned Downtime =		min.	%
Total Schedule Downtime =	3	min.	0.7 "
Total Downtime this Report =	78	min.	17.0 %

Date: 10/12/83
Total Pcs: 857

Shift: Day

Minutes: £30

1. Calibrations

2. Hydraulics

3. Heat Recovery

4. Main/Trans. Conveyors

5. Pallet Repairs

6. Sched. Mold Changes

7. Tool Repairs

8. Post Cure Baskets

9. Lack of Materials

10. Air/Vacuum Loss

11. Electrical

12. Falling Panels

13. High Pressure Equip.

14. Ovens

15. Errors ( Explain )

16. Misc. ( Explain )

17. Planned Downtime

18. Schedule Downtime

o. Scree	. Moja Ci	nanges	1C. F	alling Panels 18. Schedule Downtime
Downtime Code	Time * Down	Time Up	Mins. Down	Downtime Remarks
/3	1200	1,75	75	POJ. ON UALLY & ELETINIC CALIBRATION
/	115	130	15	Spot 2. undogged Gel AREA
4	2.05	207	2	Spot 2. undogged Gel AREA
16	223	226	3	change plastic BAq
13.	300	310	10	ISO LEAK
13	310	325	15	REPLACED ISO NOZZIE  BAG SHOES & CALIBRATE AN
/	325	3 40	15	BAG Shots a CALIBRATE AND
13	340	350	10	Replaced Bleoder (Nozzce)
			~-	
				·
	,			
			·	
		_		

Total Mechanical Downtime	=	145	min.	630	%
Total Planned Downtime	=		min.		%
Total Schedule Downtime	=	5	min.	1.1	%
Total Downtime this Report	=	150	min.	64.10	%

Date: 11/15/88

Total Pcs: 4325

Shift: Swing

Tools: 106 .
Minutes: 460

1.	Ca	1	i	ь	rá	аt	i	0	n	S

2. Hydraulics

3. Heat Recovery

4. Main/Trans. Conveyors

5. Pallet Repairs

6. Sched. Mold Changes

- 7. Tool Repairs
- 8. Post Cure Baskets
- 9. Lack of Materials
- 10. Air/Vacuum Loss
- 11. Electrical
- 12. Falling Panels
- 13. High Pressure Equip
- 14. Ovens
- 15. Errors ( Explain )
- 16. Misc. (Explain)
- 17. Planned Downtime
- 18. Schedule Downtime

b. Sched	i. Hold Ci			alling tancis
Downtime Code	Time Down	Time Up	Mins. Down	Downtime Remarks
/3	Hos	430	25	OF Rupture Dise pump.
13	5°°	504	4	OF Rupture Dise pump.  Hydraulie leak - Changed plastic  829, Fluid into molds  Spot 50 438- undossed gel ARRA  Rupture TDI DISC
4	635	638	3	Spot 50 438-undossed gel ARRA
/3	645	704	19	Rupture TDI DISC
4	800	802	2	Spot 12-433 undogsed. Jel AREA Spot 12 443 out for repair, too 5600 Down Decline
5	830	833	3	Spot 12 443 out for repair, too
			<del>-</del>	
			·	
			_	
	1			
	terit	·		
		•		

Total Mechanical Downtime = 56	min. /2.2	%
Total Planned Downtime =	min.	%
Total Schedule Downtime =	min.	%
Total Downtime this Report = 56	min. /2.2	%

Date: //-28-88
Total Pcs: 430/

Shift: Swm

Tools: 106 · Minutes: +60

1.	Ca	1	ib	ra	t	i	ons	5

2. Hydraulics

3. Heat Recovery

4. Main/Trans. Conveyors

5. Pallet Repairs

6. Sched. Mold Changes

- 7. Tool Repairs
- 8. Post Cure Baskets
- 9. Lack of Materials
- 10. Air/Vacuum Loss
- 11. Electrical
- 12. Falling Panels
- 13. High Pressure Equip.
- 14. Ovens
- 15. Errors ( Explain )
- 16. Misc. ( Explain )
- 17. Planned Downtime
- 18. Schedule Downtime

	·		<del>,</del>	
Downtime Code	Time Down	Time Up	Mins. Down	Downtime Remarks
13	250	303	18	Ropline dise T.DI.
1	3 PB	31	3	Bath bogs charles
7	311	314	3	spat 48-484 out for Regain 4385
13	427	437	10	day Tout empty TD. I
16	637	640	3	spit 11 lid friled To close
4	1007	12	3	undryged Pollet by spery both
16	10 33	1036	3	egst 12 list friend to olose
13	1112	1120	#10	Parken T. D. I hose
			7.	
				45
				99511
				X 8 9 7
·				
	-			
		·		

Total Mechanical Downtime =	53 min. //.5. %
Total Planned Downtime =	min. %
Total Schedule Downtime =	min. %
Total Downtime this Report =	53 min. //.5 %

Catarino S. Gonzalez NAME	 Catarino S. SIGNA	Hongaly TURE	July 3, 1989 DATE SIGNED
Plant Engineer	_	(_213_)	636 _ 9151 TELEPHONE NO.
11100			
			•